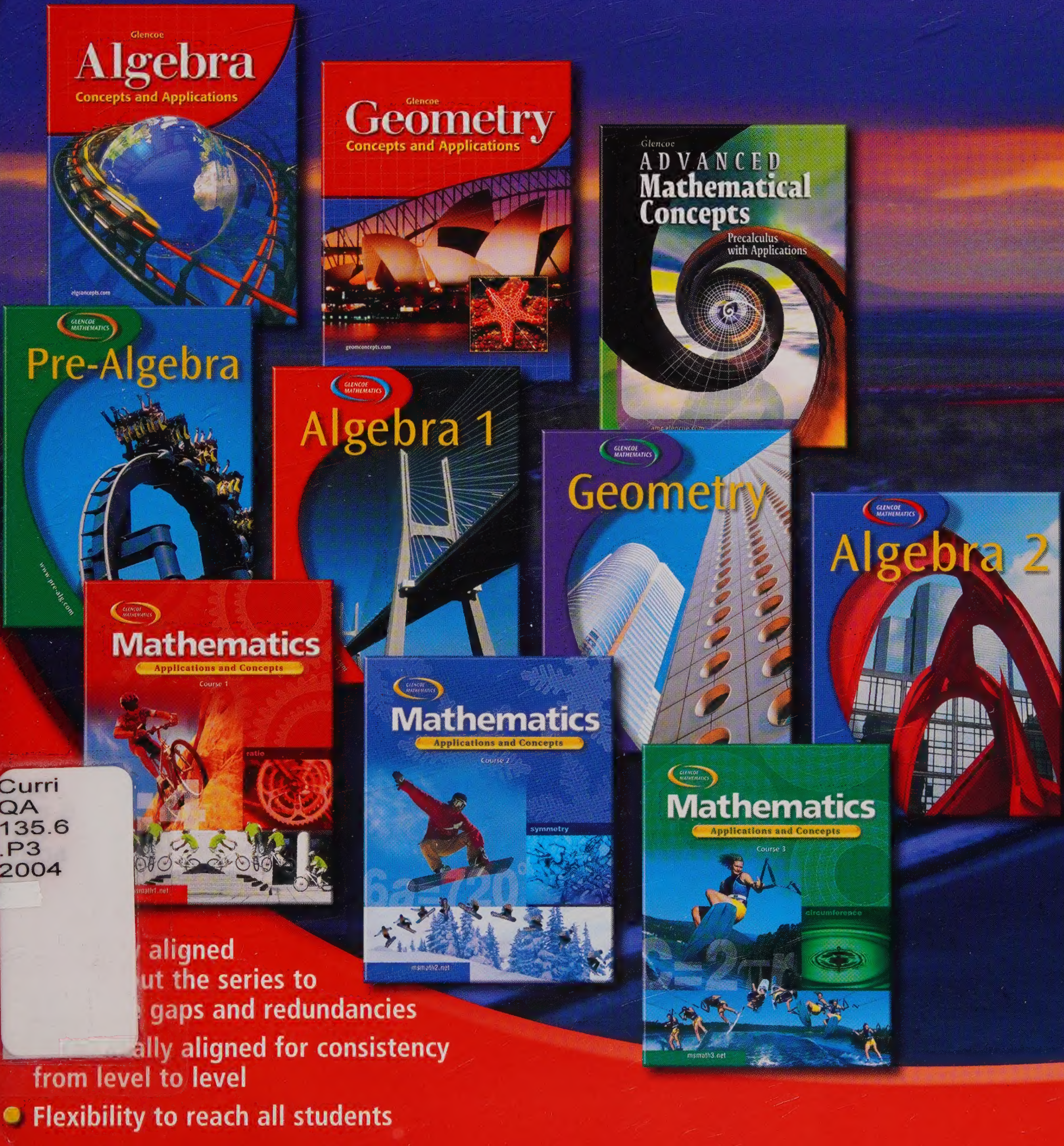
Pathways to Success

Glencoe Mathematics 6 – 12 Scope and Sequence


Glencoe Algebra Concepts and Applications
Glencoe Geometry Concepts and Applications
Glencoe Advanced Mathematical Concepts Precalculus with Applications
Pre-Algebra
Algebra 1
Geometry
Algebra 2
Mathematics Applications and Concepts Course 1
Mathematics Applications and Concepts Course 2
Mathematics Applications and Concepts Course 3

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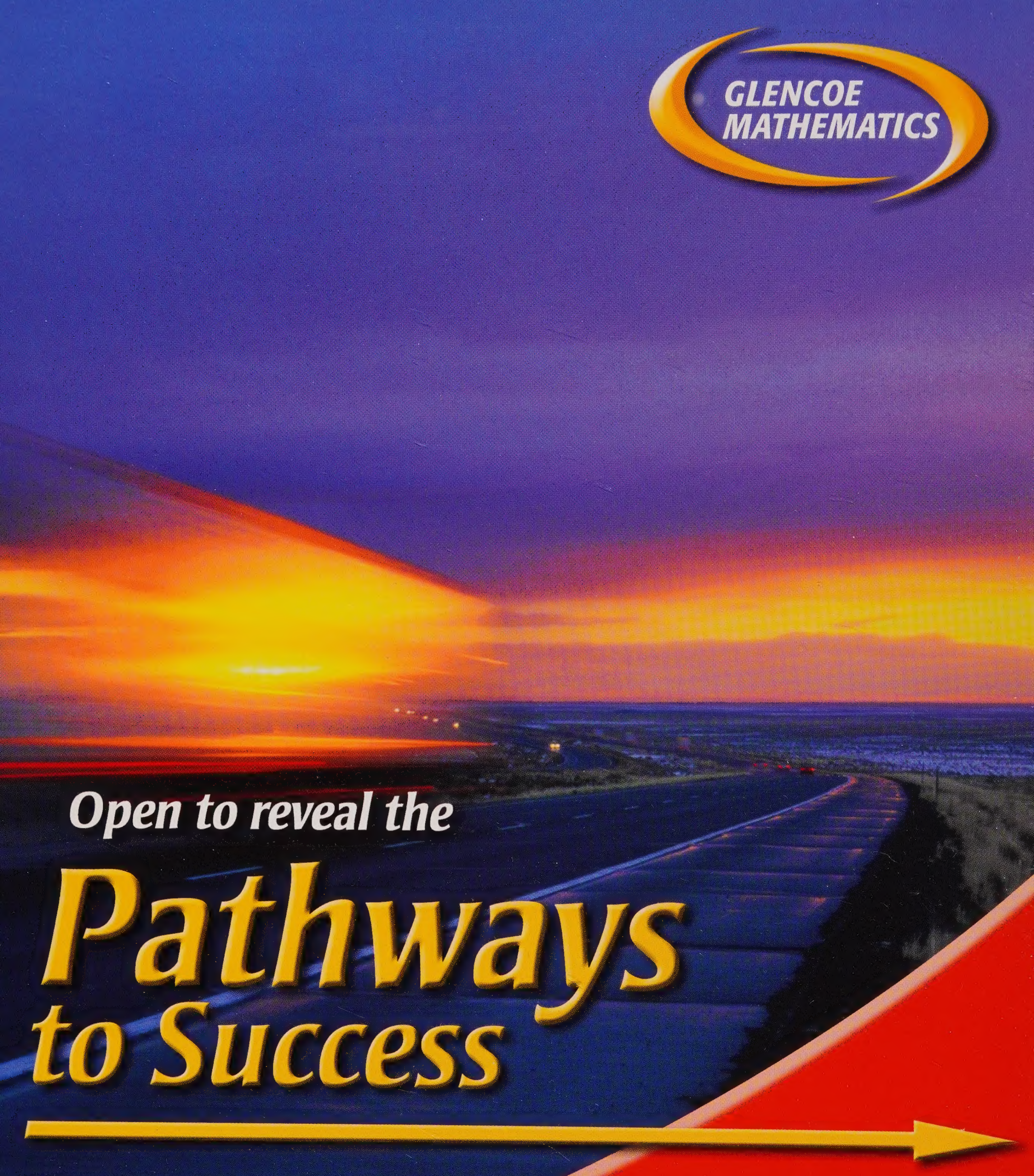
from level to level

- Flexibility to reach all students

GLENCOE MATHEMATICS



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Pathways to Success

Glencoe Mathematics 6 – 12 Scope and Sequence

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The Glencoe Mathematics Series Scope and Sequence

Grades 6–12

Glencoe provides the tools needed for every student to learn the mathematical concepts needed for success in college, trade school, or meaningful employment. The mathematical concepts previously reserved for high school courses are introduced starting in sixth grade so that the students can build a solid understanding of mathematics during the seven years of middle school and high school.

This Scope and Sequence chart shows how mathematical concepts are developed in the Glencoe Mathematics Series to meet the goals of the No child left Behind Act (NCLB). The books included are:

Title	**Acronym**
Mathematics: Applications and Concepts, Courses 1, 2, and 3	*MAC 1, MAC 2, and MAC 3*
Glencoe Pre-Algebra	*Pre-Algebra*
Glencoe Algebra 1	*Algebra 1*
Algebra: Concepts and Applications	*Alg. C & A*
Geometry: Concepts and Applications	*Geom. C & A*
Glencoe Geometry	*Geometry*
Glencoe Algebra 2	*Algebra 2*
Advanced Mathematical Concepts	*AMC*

You will notice that each book contributes to the overall vertical alignment of the series by introducing some new concepts, developing some concepts, and reinforcing other concepts. Each level of study is indicated by a different color. Red represents an introduction of a concept, blue represents the development of a concept, and yellow represents the reinforcement of a concept. Green represents the implicit use of a concept previously taught. A key is provided at the bottom of each 2-page spread.

KEY:

🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

The **lesson numbers** given in the chart reference the first occurrence of each concept or skill. Many other occurrences are found throughout the texts. The following abbreviations are used for references to features other than regular lessons.

F — Follow-Up
HM — History of Mathematics
INV — Investigation
MIW — Math in the Workplace
P — Preview
PST — Preparing for Standardized Tests
PSW — Problem-Solving Workshop
RM — Reading Mathematics
SAT — SAT & ACT Preparation
SS — Study Skill

The abbreviations (NAEP 8) and (NAEP 12) denote concepts that appear on the National Assessment of Educational Progress (NAEP) 2005 for Grade 8 and Grade 12.

A quick review of the Scope and Sequence chart reveals that Glencoe provides a comprehensive program that is vertically aligned from middle school through high school.

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Measurement 56
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Scope and Sequence Grades 6–12

	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Problem Solving				
Look for a Pattern	🟦 7-6a	🟦 3-6a	🟦 2-8a	🟩
Solve a Simpler Problem	🟦 10-8a	🟦 11-7a	🟦 7-3a	🟩
Use a simulation; act it out	🟦 6-2b	🟦 9-6a	🟥🟦 8-6b	🟥🟦 F 12-9
Guess and check	🟦 1-7a	🟦 1-5a	🟦 10-4b	🟩
Draw a diagram	🟦 13-4a	🟦 7-4a	🟦 4-5a	🟩
Make a table (NAEP 8)	🟦 11-5a		🟦 9-1a	🟩
Work backward	🟦 8-5a	🟦 4-4a	🟦 1-8a	🟩
Make a list	🟦 5-4a	🟦 5-2a	🟦 8-2a	🟩
Eliminate possibilities		🟦 6-3b		
Make a model (NAEP 8, NAEP 12)	🟦 14-5a	🟦 12-1b	🟦 12-7a	
Use a graph	🟦 2-2a	🟦 2-2a	🟦 11-6a	🟩
Use an equation	🟦 9-5b		🟦 1-7	🟥🟦 1-5
Use logical reasoning		🟦 10-7a	🟦 6-4b	
Use a Venn diagram	🟥🟦 SS 5	🟥🟦 5-2	🟦 3-3a	🟦🟨 4-4
Four-step plan	🟦 1-1	🟦 1-1	🟦 1-1	🟥🟦 1-1
Conduct a poll or survey			🟥🟦 8-7	🟦 F 6-9
Use a matrix			🟥 9-8	
Apply benchmarks (NAEP 8, NAEP 12)	🟥🟦 12-4b			
Use and evaluate formulas (NAEP 8, NAEP 12)	🟥🟦 1-8	🟦 6-8	🟦 5-8	🟦 3-7
Numbers				
Number Relationships				
Decimals				
Model decimals	🟦 3-1a			🟨 6-5
Read and write decimals	🟦 3-1	🟩		
Place value (NAEP 8)	🟦 3-1	🟩		
Compare and order	🟦 3-2	🟩	🟨 2-2	
Round decimals	🟦 3-3	🟩	🟩	
Relate decimals and fractions	🟥🟦 3-1	🟦🟨 5-4	🟨 2-1	🟨 5-2
Relate decimals, ratios, and percents (NAEP 8)	🟥🟦 10-6	🟦🟨 5-6	🟨 5-2	🟨 6-5
Terminating and repeating decimals	🟥🟦 5-7	🟦🟨 5-4	🟦🟨 2-1	🟦🟨 5-2

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

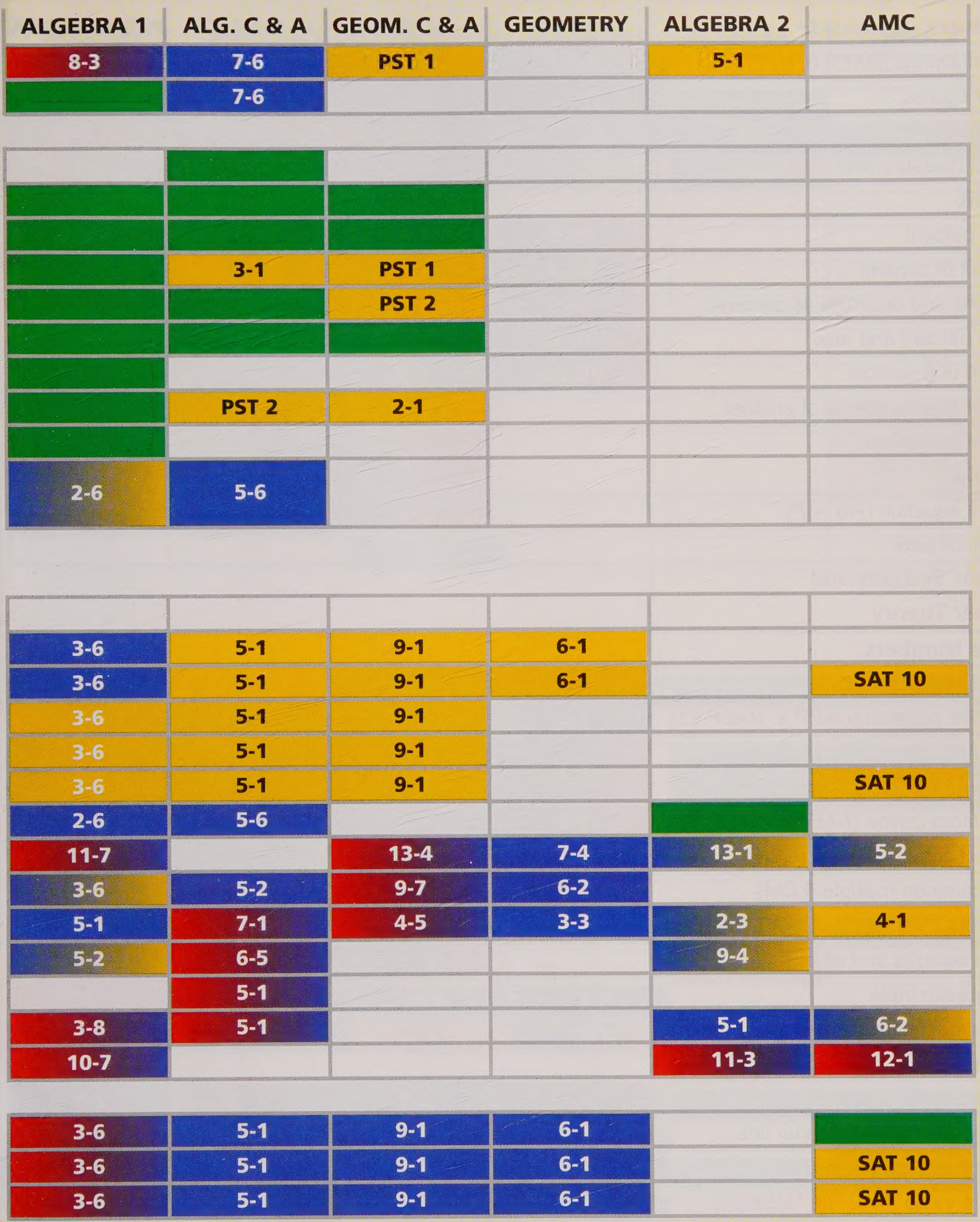
ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
4-8	INV 1	PSW 1	2-1		
14-5		PSW 7			
	PSW 3	PSW 2			
	PSW 2	PSW 2			
	1-5	7-2			
3-4	4-5	15-3			
	1-5	PSW 7			
		PSW 7	5-3		
	1-5	INV 5			1-4
	1-7	PSW 2			
	1-4	2-2			1-4
	INV 1	PSW 15			
🟩	10-1	2-1	2-2		13-4
3-1	1-5	1-6			
13-1	1-6	PSW 3			
	INV 2		F 2-4		2-3
3-1	1-5	1-6	1-3	1-1	🟩

	🟩				
	🟩	2-1			
	🟩	🟩			
	3-1	2-1			
	🟩	🟩			
🟩	3-1	2-1		1-2	
🟩					
	3-1	2-1		2-1	🟩

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Numbers *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Scientific notation (NAEP 8, NAEP 12)	4-1	1-9	2-9	4-8
Powers of ten	4-1	🟩	2-9	4-2
Fractions				
Model fractions	5-2a	6-1		4-5
Mixed numbers and improper fractions	5-3			5-5
Equivalent fractions	5-2	5-3	🟩	4-5
Compare and order fractions	5-5	5-8	2-2	5-1
Simplify fractions	5-2	5-3	🟩	4-5
Least common denominator (LCD)	5-5	6-2	2-6	5-6
Round and estimate fractions	6-2	6-1	🟩	🟩
Relate fractions and decimals	5-6	5-4	2-1	5-1
Relate fractions and percents	10-5	5-6	5-2	6-5
Represent probability using fractions, decimals, and percents (NAEP 8)	11-1	9-1	8-1	6-9
Proportional Reasoning				
Ratios				
Model ratios	10-1		4-1	6-1
Concept of ratio	10-1	7-1	4-1	6-1
Read and write ratios	10-1	7-1	4-1	6-1
Simplify ratios	10-1	7-1	4-1	6-1
Use ratios in problem situations (NAEP 8)	10-1	7-1	4-1	6-1
Relate ratios and fractions (NAEP 8)	10-1	7-1	4-1	6-1
Ratio and probability	11-1	9-1	8-1	6-9
Trigonometric ratios (NAEP 12)			4-7b	9-8
Scale factor		7-4	4-5	6-3
Slope of a line		4-7	4-3	8-4
Rate, direct variation (NAEP 8, NAEP 12)	10-1	7-2	4-1	6-1
Unit rate	10-1	7-2	4-1	6-1
Dimensional analysis			2-3	5-3
Common ratio, geometric sequence			11-1	5-10
Proportion				
Concept of proportion	10-2	7-3	4-4	6-2
Solve proportions (NAEP 8, NAEP 12)	10-2	7-3	4-4	6-2
Property of proportion (cross product)	10-2	7-3	4-4	6-2

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use



ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
8-3	7-6	PST 1		5-1	
🟩	7-6				

	🟩				
🟩	🟩	🟩			
🟩	🟩	🟩			
🟩	3-1	PST 1			
🟩	🟩	PST 2			
🟩	🟩	🟩			
🟩					
🟩	PST 2	2-1			
🟩					
2-6	5-6				

3-6	5-1	9-1	6-1		
3-6	5-1	9-1	6-1		SAT 10
3-6	5-1	9-1			
3-6	5-1	9-1			
3-6	5-1	9-1			SAT 10
2-6	5-6			🟩	
11-7		13-4	7-4	13-1	5-2
3-6	5-2	9-7	6-2		
5-1	7-1	4-5	3-3	2-3	4-1
5-2	6-5			9-4	
	5-1				
3-8	5-1			5-1	6-2
10-7				11-3	12-1

3-6	5-1	9-1	6-1		🟩
3-6	5-1	9-1	6-1		SAT 10
3-6	5-1	9-1	6-1		SAT 10

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Numbers *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Scale drawings (NAEP 8, NAEP 12)	10-3	7-4	4-6	6-3
Similar figures	13-6	10-6	4-5	9-7
Dilations		10-8b	4-8	F 10-3
Indirect measurement		10-6	4-7	9-7
Percent				
Model percent	10-4	5-5	5-1	P 6-5
Concept of percent	10-4	5-5	5-1	6-4
Fractions and decimals as percents	10-5	5-5	5-2	6-4
Relate percent and ratio	10-4	5-5	5-1	
Percent of a number	10-7a	7-7	5-3	6-5
Percent one number is of another		7-8	5-3	6-5
Percent proportion $\left(\frac{P}{B}=\frac{r}{100}\right)$		7-8	5-3	6-5
Percent equation ($RB = P$)		8-2	5-6	6-7
Percent of error				
Number Systems and Number Theory				
Whole Numbers				
Positive exponents	1-4	1-2	1-2	4-2
Divisibility patterns (NAEP 8, NAEP 12)	1-2	🟩	🟩	4-1
Prime and composite numbers (NAEP 8, NAEP 12)	1-3	5-1	🟩	4-3
Prime factorization (NAEP 8, NAEP 12)	1-3	5-1	🟩	4-3
Greatest common factor (GCF)	5-1	5-2	🟩	4-4
Least common multiple (LCM)	5-4	5-7	🟩	5-6
Factorials		9-4	8-3	12-7
Perfect squares and roots		11-1	3-1	9-1
Pythagorean triple			3-5	P 9-5
Triangular, square, pentagonal numbers				9-4
Integers				
Read and write integers	8-1	3-1	1-3	2-1
Graph integers on a number line	8-1	3-1	1-3	2-1
Compare and order integers	8-1	3-2	1-3	2-1
Absolute value (NAEP 8, NAEP 12)	8-1	3-1	1-3	2-1

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
3-6	5-1	9-2	6-2		
11-6	PST 12	9-2	6-2	🟩	
4-2	2-2	16-6	9-5	4-4	2-4
11-7		13-4	6-3	13-1	

	5-3				
🟩	5-3	🟩			
🟩	5-3	PST 2			
🟩	5-3	🟩			
🟩	5-3	2-1			
🟩	5-3	4-1			SAT 12
🟩	5-3				SAT 12
🟩	5-4				
		2-2			

1-1	7-4	🟩	🟩	🟩	🟩
	PST 1				3-8
9-1	10-1			🟩	🟩
9-1	7-7	PST 1			
9-1	10-1	PST 6			
12-7					
14-1				11-7	12-5
2-7	7-4	13-1		5-5	
11-4	PST 8	6-6	7-2		
	INV 1	5-1	2-1		

2-1	2-1	2-1	🟩	🟩	🟩
2-1	2-1	2-1	🟩		🟩
🟩	2-1	2-1	🟩	🟩	🟩
2-1	2-1	2-1	🟩	1-4	

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Scope and Sequence Grades 6–12

Numbers *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Negative-integer exponents			2-8	4-7
Rational Numbers				
Identify and simplify rational numbers		5-8	2-1	5-2
Rational numbers and decimals (NAEP 8)		5-4	2-1	5-1
Compare and order (NAEP 8)		5-8	2-2	5-1
Graph rationals on a number line (NAEP 8)			2-2	5-1
Scientific notation (NAEP 8, NAEP 12)		1-9	2-9	4-8
Rational exponents				
Irrational numbers				
Identify irrational numbers		11-2	3-3	9-2
Graph irrational numbers			3-5b	9-2
Irrational exponents				
e				
Real numbers				
Identify and classify real numbers			3-3	9-2
Graph real numbers			3-3	9-2
Roots		11-1	3-1	9-1
Estimate square roots		11-2	3-2	9-1
Pythagorean theorem (NAEP 8, NAEP 12)		11-3	3-4	9-5
Distance on the coordinate plane (NAEP 12)			3-6	9-6
Real number exponents				
Complex numbers (imaginary numbers)				
Identify complex numbers				
Simplify complex numbers				
Operations				
Represent vectors				
Trigonometric, polar form				
Roots and powers				
DeMoivre's Theorem				
Solving polynomial equations				
Euler's Formula				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
8-2	7-5			5-1	
🟩	3-1	2-1			
🟩	3-1	2-1			
🟩	3-1	2-1			
2-1	3-1	2-1			
8-3	7-6	PST 1		5-1	11-1
				5-7	11-1
2-7	8-6	2-1		1-2	4-1
	8-6	2-1		1-2	🟩
				10-1	11-1
				10-5	11-3
2-7	14-1	2-1		1-2	4-1
2-7	14-1	2-1		🟩	🟩
2-7	8-5	6-6	🟩	5-5	
2-7	8-6			5-5	
11-4	8-7	6-6	7-2	🟩	SAT 5
11-5	14-2	6-7	1-3	8-1	10-1
				10-1	11-1
				5-9	4-1
					9-5
				5-9	9-5
					9-5
					9-6
					9-8
					9-8
				7-3	9-8
					12-7

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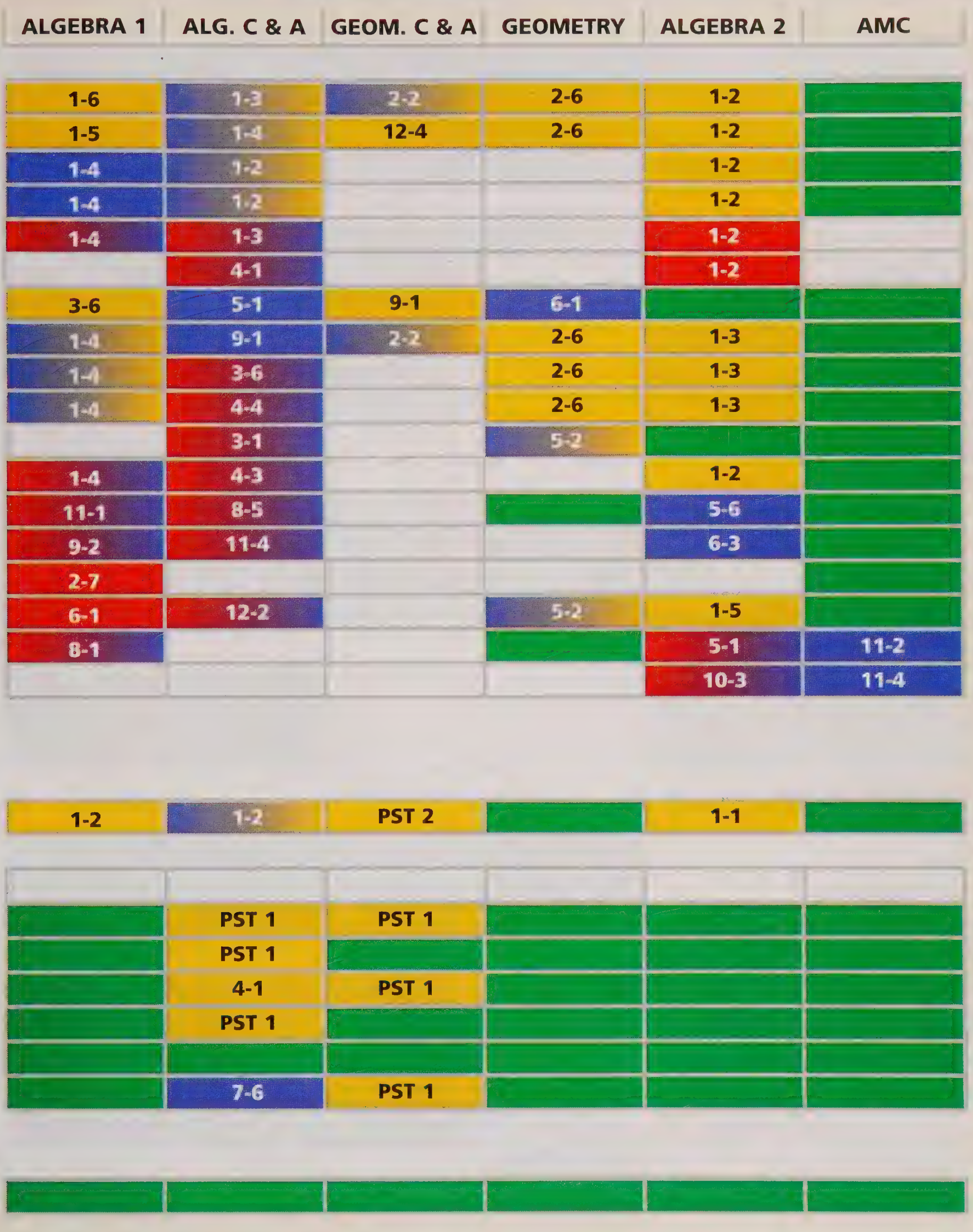
Scope and Sequence Grades 6–12

Numbers *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Properties				
Associative and Commutative properties	🟥🟦 9-1	🟥🟦 1-6	🟨 1-2	🟨 1-4
Distributive property	🟥🟦 9-1	🟥🟦 1-6	🟨 1-2	🟨 3-1
Identity	🟥🟦 9-1	🟥🟦 1-6	🟦 1-2	🟦 1-4
Inverse		🟥🟦 6-5	🟦 1-4	🟦 5-4
Closure, whole numbers			🟥 1-6	🟥 1-4
Closure, rational numbers		🟥 6-6		
Property of proportions (cross products)	🟥 10-2	🟥🟦 7-3	🟦 4-4	🟦 6-2
Properties of equality	🟥🟦 9-3		🟦🟨 1-2	🟦🟨 1-3
Addition, subtraction	🟥🟦 9-3	🟥🟦 4-2	🟥🟦 1-8	🟥🟦 3-3
Multiplication, division		🟥🟦 6-5	🟥🟦 1-9	🟥🟦 3-4
Comparison Property				
Multiplicative Inverse Property		🟥🟦 6-5	🟥🟦 2-4	🟥🟦 5-4
Properties of square roots (radicals)				
Zero Product Property				
Completeness Property				
Properties of inequalities			🟥🟦 10-6	🟥🟦 7-4
Properties of powers (exponents)			🟥🟦 12-6	🟥🟦 4-6
Properties of logarithms				
Operations				
Computation				
Order of operations	🟥🟦 1-5	🟦🟨 1-3	🟨 1-2	🟨 1-2
Decimals				
Model decimal operations	🟥🟦 4-2a			
Add and subtract decimals	🟦 3-5	🟩	🟩	🟩
Multiply by a whole number	🟦 4-1	🟩	🟩	🟩
Multiply two decimals	🟦 4-2a	🟩	🟩	🟩
Divide by a whole number	🟦 4-3	🟩	🟩	🟩
Divide by decimals	🟦 4-4a	🟩	🟩	🟩
Powers of ten	🟥🟦 4-1	🟩	🟩	🟩
Fractions				
Add and subtract fractions				
Like denominators	🟦 6-3	🟦 6-2	🟦 2-5	🟦 5-5

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use



ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
1-6	1-3	2-2	2-6	1-2	🟩
1-5	1-4	12-4	2-6	1-2	🟩
1-4	1-2			1-2	🟩
1-4	1-2			1-2	🟩
1-4	1-3			1-2	
	4-1			1-2	
3-6	5-1	9-1	6-1	🟩	🟩
1-4	9-1	2-2	2-6	1-3	🟩
1-4	3-6		2-6	1-3	🟩
1-4	4-4		2-6	1-3	🟩
	3-1		5-2	🟩	🟩
1-4	4-3			1-2	🟩
11-1	8-5		🟩	5-6	🟩
9-2	11-4			6-3	🟩
2-7					🟩
6-1	12-2		5-2	1-5	🟩
8-1			🟩	5-1	11-2
				10-3	11-4
1-2	1-2	PST 2	🟩	1-1	🟩
🟩	PST 1	PST 1	🟩	🟩	🟩
🟩	PST 1	🟩	🟩	🟩	🟩
🟩	4-1	PST 1	🟩	🟩	🟩
🟩	PST 1	🟩	🟩	🟩	🟩
🟩	🟩	🟩	🟩	🟩	🟩
🟩	7-6	PST 1	🟩	🟩	🟩
🟩	🟩	🟩	🟩	🟩	🟩

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Scope and Sequence

Grades 6–12

Operations *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Unlike denominators	6-4	6-2	2-6	5-7
Multiply and divide fractions	7-2	6-4	2-3	5-3
Add and subtract mixed numbers	6-5	6-3	2-5	5-7
Multiply and divide mixed numbers	7-3	6-4	2-3	5-3
Percents				
Percent of a number	10-7a	7-7	5-3	6-5
Percent of change		8-4	5-7	6-8
Percent proportion $\left(\frac{P}{B} = \frac{r}{100}\right)$		7-8	5-3	6-5
Percent equation ($RB = P$)		8-2	5-6	6-7
Percent of error				
Mixture problems with percent				
Integers				
Model integer addition & subtraction	8-2	3-4a	1-4	2-2
Model integer multiplication & division	8-4	3-6	1-6	2-4
Add and subtract integers	8-2	3-4	1-4	2-2
Multiply and divide integers	8-4	3-6	1-6	2-4
Rational Numbers (NAEP 8)				
Add and subtract			2-6	5-5
Multiply			2-3	5-3
Divide			2-4	5-4
Estimation (NAEP 8, NAEP 12)				
Decimals				
Rounding	3-4	🟩	🟩	🟩
Sums and differences	3-4	🟩	🟩	🟩
Products and quotients	4-1	🟩	🟩	🟩
Fractions				
Rounding	6-2	6-1	🟩	🟩
Sums and differences	6-2	6-1	🟩	🟩
Products and quotients	7-1	6-1	🟩	🟩
Percents	10-8	8-1	5-5	6-6
Square roots (NAEP 8, NAEP 12)		11-2	3-2	9-1
Angle measure	13-2			
Area or volume (NAEP 8, NAEP 12)	7-1			

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
🟩	PST 1	PST 2	🟩	🟩	🟩
🟩	PST 2	PST 5	🟩	🟩	🟩
🟩	🟩	🟩	🟩	🟩	🟩
🟩	🟩	🟩	🟩	🟩	🟩

🟩	5-3	PST 2		🟩	9-6
🟩	5-5			🟩	4-8
🟩	5-3			🟩	SAT 5
🟩	5-4			🟩	🟩
	12-7	2-2		🟩	🟩
3-9	5-4				9-8

	2-3				
	2-5				
2-2	2-3		🟩	🟩	🟩
2-3	2-5		🟩	🟩	🟩

2-2	3-2			🟩	🟩
2-3	4-1			🟩	🟩
2-4	4-3			🟩	🟩

🟩	🟩	🟩	🟩		
🟩	🟩	🟩	🟩		
🟩	🟩	🟩	🟩		

🟩	PST 1	🟩	🟩		
🟩	🟩	🟩	🟩		
🟩	🟩	🟩	🟩		
🟩		PST 5			
2-7	8-5	🟩	🟩	5-5	
			🟩		

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Operations *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Significant digits				
Slope of a line				
Circumference of a circle				
Strategies for estimating				
Rounding	3-3	6-1	🟩	🟩
Compatible numbers	7-1	6-1	🟩	
Clustering	3-4	🟩	🟩	
Mental math				
Divisibility patterns	1-2	🟩	🟩	4-1
Solving equations mentally	1-7	1-5		1-5
Multiply by powers of ten	4-1	🟩		
Patterns and Functions				
Discrete Patterns (see also Discrete Math)				
Sequences				
Arithmetic and geometric, informally	7-6	1-7	11-1	5-10
Fibonacci sequence			11-1b	F 5-10
Pascal's Triangle		9-6a	8-4b	F 12-6
Arithmetic Sequences and Series				
Arithmetic sequence, definition		1-7	11-1	5-10
Formula for *n*th term				
Arithmetic means				
Arithmetic series				
Sum of arithmetic series				
Sigma notation (Σ)				
Geometric Sequences and Series				
Geometric sequence, definition		1-7	11-1	5-10
Formula for *n*th term				
Geometric means				
Geometric series				
Sum of finite geometric series				
Model geometric series				

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
		10-5			
		4-5			
		11-5			

	INV 3	1-1			
4-8		PSW 1		11-6	12-6
F 2-6		INV 1	6-6	11-7	12-5

4-7	INV 3			11-1	UP 4
4-7				11-1	12-1
				11-1	12-1
				11-2	12-1
				11-2	12-1
				11-2	12-5

10-7	INV 11			11-3	12-1
10-7				11-3	12-1
10-7			7-1	11-3	12-2
				11-4	12-2
				11-4	12-2
	INV 11				

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Scope and Sequence Grades 6–12

Patterns and Functions *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Infinite sequences and series				
Limits of infinite sequences				
Theorems for limits				
Sum of infinite series				
Continued fractions				
Convergent, divergent series				
Ratio and comparison tests				
Sigma notation				
Binomial Expansion				
Binomial Theorem				
Sequence for *e*				
Trigonometric Series				
Exponential Series				
Euler's Formula				
Recursion				
Recursive formula, definition				
Fibonacci sequence, recursive form				
Composition of functions				
Iteration and complex numbers				
Compound interest			5-8b	
Graphical iteration, linear functions				
Graphical iteration $f(z) = z^2 + c$				
Fractals				
Fractal, concept and description				
Self-similarity				
Functions and Relations				
Represent functions and relations				
Function tables	9-6	4-6	11-2	8-1
Graphs	9-7	4-6	11-3	8-1
Function rules and equations	9-6	4-6	11-2	8-2
Sketch graphs from events				
Function machines	9-6a	4-6		
Relations				1-6
Mapping				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
				11-5	12-2
					12-2
					12-3
				11-5	12-3
					12-3
					12-3B
					12-3B
				11-5	12-4
				12-8	12-5
				12-7	12-6
					12-6
					12-7
					12-7
					12-7

4-7	INV 3		6-6	11-6	
				11-6	
				7-7	1-2
					9-5
10-6				10-1	12-7
					12-8
					12-8

			6-6	F 11-6	12-8
			6-6	F 11-6	

1-8	6-4	PST 12		2-1	1-1
1-8	6-3			2-1	1-1
4-8	6-3			2-1	1-1
1-8					1-7
4-3	6-1			2-1	1-1
4-3		5-3		2-1	1-2

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Scope and Sequence Grades 6–12

Patterns and Functions *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Function, definition of			🟦 11-2	🟦 8-1
Vertical line test				🟦 8-1
Domain and range		🟥 4-6	🟥 11-2	🟦 1-6
Dependent and independent variables			🟥 11-2	
Abcissa, ordinate				
f(*x*) notation			🟥🟦 11-2	🟥 RM 8
Direct, inverse variation				🟦 8-5
Joint variation				
Operations with functions				
Composite functions				
Symmetry and functions				
Transformations, graphs of functions (NAEP 12)				
Inverse of a function or relation				
Graph inverse function or relation				
Horizontal line test				
Continuous, discontinuous functions				
End behavior				
Tangent to a curve				
Critical points				
Derivative of a function				
Linear functions and relations				
Linear function, definition			🟥🟦 11-3	🟥🟦 8-2
Graphing linear functions			🟥🟦 11-3	🟥🟦 8-2
Slope		🟥 4-7	🟥🟦 4-3	🟥🟦 8-4
Intercepts			🟥🟦 11-3	🟥🟦 8-3
Families of linear graphs			🟥 11-5a	🟥 F 8-6
Modeling real-world data (NAEP 12)				
Piecewise function				
Absolute value function				
Step function				
Greatest integer function				
Constant function				
Zeros of linear functions				

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
4-6	6-4			2-1	1-1
4-6	6-4			2-1	1-1
1-8	6-1			2-1	1-1
1-8	6-5			2-1	🟩
4-1				2-1	1-1
4-6	6-4			2-1	1-1
5-2	6-5			9-4	3-8
				9-4	3-8
				7-7	1-2
				7-7	1-2
10-1				6-1	3-1
F 10-1				P 6-6	3-2
4-3				7-8	3-4
4-3				7-8	3-4
				7-8	3-4
				2-1	3-5
					3-5
					3-6
					3-6
					15-2
4-5				2-2	1-3
4-5	6-3	PST 11	🟩	2-2	1-3
5-1	7-1	4-5	3-3	2-3	1-3
4-5	7-3	4-6	🟩	2-3	1-3
F 5-3	7-6			2-3	1-3B
5-3	6-3			2-5	1-6
				2-6	1-7
				2-6	1-7
				2-6	1-7
				2-6	1-7
				2-6	1-3
					1-3

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Patterns and Functions *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Quadratic functions				
Graphing quadratic functions			12-2	13-6
Families of quadratic graphs			12-2a	
Maximum or minimum points				
Analyzing graphs (vertex, symmetry)				
Polynomial functions				
Definition				
Graphs of polynomial functions				
Graphing polynomial functions				
Critical points				
Remainder Theorem				
Locating zeros				
Upper Bound Theorem				
Fundamental Theorem of Algebra				
General shapes of polynomial functions				
Applications				
Modeling real-world data (NAEP 12)				
Approximate sin x and cos x				
Radical functions				
Square root function				
Graph of square root function				
Exponential and Logarithmic Functions				
Exponential functions, definition				
Graphs of exponential functions				
Identify exponential graphs				
Growth and decay (NAEP 12)				
Graphs of logarithmic functions				
Rational functions				
Graphs of rational functions				
Asymptotes				
Inverse variation				
Model real-world data (NAEP 12)				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
10-1	11-1			6-1	1-1
F 10-1	11-2			P 6-6	10-5
10-1	11-1			6-1	10-5
10-1	11-1			6-1	10-5

				7-1	4-1
				7-1	4-1
				7-2	4-1
				7-2	3-6
				7-4	4-3
				7-5	4-5
					4-5
				7-5	4-1
				7-1	4-8
				7-1	4-1
				F 7-2	4-8
					12-7

				7-9	
				7-9	

10-5				10-1	11-2
10-5				10-1	11-2
10-5					🟩
10-6				10-6	11-2
				10-2	11-4

	15-1			9-3	3-7
				9-3	3-7
12-1				9-4	3-8
					3-7

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Patterns and Functions *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Trigonometric functions				
Trigonometric functions, definition				
Evaluate trigonometric functions				
Circular functions				
Periodic functions				
Inverse trigonometric functions				
Graph trigonometric functions				
Amplitude, period				
Phase shift				
Graph inverse trigonometric functions				
Transformations				
Transformation, definition	13-5b	10-8	6-7	10-3
Dilations		10-8b	4-8	F 10-3
Translations	13-5b	10-8	6-8	10-3
Reflections	13-5b	10-9	6-7	10-3
Rotations	13-5b	10-9b	6-9	10-3
Isometry				

Algebra

Equations and Expressions

	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Basic Concepts				
Variable, expression, equation	1-6	1-4	1-2	1-3
Order of operations	1-5	1-3	1-2	1-2
Evaluate algebraic expressions (NAEP 8, NAEP 12)	1-6	1-4	1-3	1-3
Write algebraic expressions, equations (NAEP 8, NAEP 12)		4-1	1-7	1-3
Solution (solution set)	1-7	1-5	1-2	1-5
Equations as relations and functions		4-6	11-2	8-2
Multiple representations of expressions (NAEP 8, NAEP 12)		4-1	1-7	1-3
Exponents				
Positive integer exponents	1-4	1-2	1-2	4-2
Negative integer exponents			2-8	4-7

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
				13-1	5-3
				13-1	🟩
				13-6	5-3
				13-6	6-3
				13-7	6-8
				14-1	6-3
				13-6	6-4
				14-2	6-5
					6-8
4-2		5-3	P 9-1	4-4	2-4
4-2		16-6	9-5	4-4	2-4
4-2		5-3	9-2	4-4	2-4
4-2		5-3	9-1	4-4	2-4
4-2		5-3	9-3	4-4	2-4
			9-1	4-4	
1-1	1-1	🟩	🟩	1-1	🟩
1-2	1-2	PST 2	🟩	1-1	🟩
1-3	1-2	PST 6	🟩	1-1	🟩
1-1	1-1	PST 2	🟩	🟩	🟩
1-3	3-4		🟩	1-3	🟩
4-4	6-2			2-1	🟩
1-1	1-1			🟩	🟩
1-1	8-1	PST 6		🟩	11-1
8-2	8-3	PST 4		5-1	11-1

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Scope and Sequence Grades 6–12

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Multiply, divide powers				
Properties of exponents (powers)			12-6	4-6
Rational exponents				
Real exponents				
Monomials				
Model monomials			12-3a	
Constants and coefficients			10-1	1-3
Degree				13-1
Simplify monomial expressions				
Factored form of monomials				4-3
Powers of monomials				
Multiply and divide monomials			12-6	4-6
Polynomials				
Like terms			10-1	3-2
Binomials and trinomials, definition				13-1
Degree				13-1
Polynomial, definition			12-3	13-1
Simplify polynomial expressions			12-3	
Polynomial Operations				
Add polynomials			12-4	13-2
Subtract polynomials			12-5	13-3
Model addition and subtraction			12-4	13-2
Multiply binomials				
Model multiplication				
FOIL method				
Difference of squares				
Perfect square trinomials				
Multiply polynomials by monomials			12-7	13-4
Divide polynomials by monomials				
Divide polynomials by polynomials				
Model division of polynomials				
Synthetic division				
Factor binomials				
Model factoring binomials				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
8-1	8-2	PST 6	🟩	5-1	11-1
8-1	8-2	PST 6	🟩	5-1	11-1
				5-7	11-1
				10-1	11-1
	9-1				
1-5				5-1	🟩
8-4	9-1			5-1	🟩
	8-2	PST 6		5-1	11-1
9-1	10-1				🟩
8-1	8-2	PST 6	🟩	5-1	11-1
8-1	8-2	PST 6	🟩	5-1	🟩
1-5	1-4			5-2	🟩
8-4	PSW 7			5-2	🟩
8-4	9-1			5-2	4-1
8-4	9-1			5-2	4-1
	9-3			5-2	1-2
8-5	9-2			5-2	🟩
8-5	9-2			5-2	
P 8-5	9-2				
8-7	9-4		🟩	5-2	
8-7	9-4			5-2	
8-7	9-4			5-2	
8-8	9-5			🟩	
8-8	9-5			🟩	
8-6	9-3		🟩	5-2	
12-5			🟩	5-3	
12-5	15-3		🟩	5-3	4-3
12-5	15-3				
				5-3	4-3
9-2	10-2	PST 16	🟩	5-4	SAT 3
P 9-2	10-2				

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Scope and Sequence Grades 6–12

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Factor trinomials				
Model factoring trinomials				
Difference of squares				
Model the difference of squares				
Perfect square trinomials				
Model perfect square trinomials				
Solve equations by factoring				
Remainder Theorem				
Factor Theorem				
Binomial expansion				
Binomial Theorem				
Solve Equations (NAEP 8, NAEP 12)				
Addition and subtraction equations	9-2	4-2	1-8	3-3
Multiplication and division equations	9-4	4-3	1-9	3-4
Multi-step (two-step) equations	9-5	4-4	10-2	3-5
Equations with variables on both sides			10-4	7-1
Use concrete methods (models)	9-2a	4-2a	1-8	P 3-3
Use informal methods	1-7	1-5		1-5
Use formal methods	9-2	4-2	1-8	3-3
Apply formulas to solve problems				3-7
Solve Inequalities (NAEP 8, NAEP 12)				
Write inequalities			10-5	7-3
Graph inequalities	9-4b	4-5	10-5	7-3
Addition, subtraction inequalities	9-4b	4-5	10-6	7-4
Multiplication, division inequalities		4-5	10-7	7-5
Multi-step inequalities		4-5	10-7	7-6
Graph a solution set on a number line		4-5	10-6	7-4
Compound inequalities				
Solve Absolute Value Equations and Inequalities				
Absolute value equations				
Absolute value inequalities				
Graph a solution set on a number line				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
9-3	10-3		🟩	5-4	
P 9-3	10-3			5-4	
9-5	10-5		🟩	5-4	SAT 3
9-5	10-5				
9-6	10-5		🟩	5-4	7-4
	10-5				
9-2	11-4		🟩	6-3	4-2
				7-4	4-3
				7-4	4-3
				12-8	12-5
				12-7	12-6
3-2	3-6		🟩	1-3	🟩
3-3	4-4		🟩	1-3	🟩
3-4	4-5	PST 4	🟩	1-3	🟩
3-5	4-6		🟩	1-3	🟩
P 3-7	3-5				
3-1					
3-2	3-6			1-3	🟩
3-8	3-4	1-6	🟩	1-1	🟩
6-1	12-1				
6-1	12-1				
6-1	12-2	PST 6	🟩	1-5	
6-2	12-3		🟩	1-5	
6-3	12-4		🟩	1-5	🟩
6-1	12-2		5-4		🟩
6-4	12-5		5-4	1-6	
6-5	3-7	PST 3		1-4	1-2
6-5	12-6			1-6	3-3
6-5	12-6			1-6	

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Scope and Sequence Grades 6–12

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Linear Equations and Inequalities				
Write Linear Equations (NAEP 8, NAEP 12)				
From a pattern				
In point-slope form				
In slope-intercept form				8-6
From two intercepts				
From two points				8-7
In standard form				
Find intercepts from an equation			11-5	8-3
Normal form (trigonometry)				
Vector equation				
Parametric equation				
Polar form				
Graph Linear Equations				
Graph solution set of a relation				1-6
Graph linear equations	9-7		11-3	8-2
With calculators			11-5a	F 8-6
Slope of a line		4-7	4-3	8-4
Find intercepts from a graph				8-3
Graph Inequalities				
Graph linear inequalities			11-8	8-10
Graph nonlinear inequalities				
Systems of Equations and Inequalities				
Consistent, inconsistent				
Independent, dependent				
Graph Systems				
Systems of linear equations			11-7	8-9
Systems of linear inequalities				8-10
Polygonal convex set				
Vertex Theorem				
Solve Systems (NAEP 12)				
By graphing			11-7	8-9

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
4-8	PST 9				1-4
5-5	7-2	4-6	3-4	2-4	1-4
5-4	7-3		3-4	2-4	1-3
5-4	7-3				1-4
5-4	7-2		3-4	2-4	1-4
5-5	6-3			2-2	1-3
4-5	7-5		🟩	2-2	1-3
					7-6
					8-6
					8-6
					9-4
4-4	6-2			2-1	1-1
4-5	6-3		🟩	2-2	1-3
F 4-5	7-6				1-3
5-1	7-1		3-3	2-3	1-3
	PST 10			2-2	1-3
6-6	12-7			2-7	1-8
	INV 12			6-7	3-3
7-1	13-2			3-1	2-1
7-1	13-2			3-1	2-1
7-1	13-1	16-1	🟩	3-1	2-1
7-5	13-7			3-3	2-6
					2-6
					2-6
7-1	13-1	16-1	🟩	3-1	2-1

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Scope and Sequence Grades 6–12

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
By substitution			11-7	8-9
By elimination				
With Cramer's Rule (determinants)				
Linear programming				
Infeasible (unbounded)				
Systems with three variables				
Use matrices				
Quadratic systems				
Rational Equations and Expressions				
Simplify rational expressions				
Multiply and divide rational expressions				
Add and subtract rational expressions				
Complex fractions, mixed expressions				
Solve rational equations (NAEP 12)				
Graph rational equations				
Solve rational inequalities (NAEP 12)				
Partial fractions				
Quadratic and Polynomial Equations				
Families of quadratic graphs			12-2a	F 13-6
Graph quadratic equations			12-2	13-6
Solve by graphing (NAEP 12)				
Solve by factoring (NAEP 12)				
Solve by completing the square (NAEP 12)				
Solve by the Quadratic Formula (NAEP 12)				
Roots as solutions				
Discriminant and roots				
Write an equation for given conditions				
Polynomial Equations				
Fundamental Theorem of Algebra				
As product of linear factors				
Solve by graphing, with calculators				
Roots, complex conjugates				
Rational Root Theorem				

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
7-2	13-3	16-2	🟩	3-2	2-1
7-3	13-4	16-2	🟩	3-2	2-1
				4-6	HOM 2
				3-4	2-7
				3-4	2-7
				3-5	2-2
				4-8	2-5
	13-6			8-7	10-8
12-2	15-1			9-1	
12-3	15-2			9-1	
12-6	15-4			9-2	
12-8				9-2	
12-9	15-6			9-6	4-6
F 12-2				9-3	3-7
				9-6	4-6
					4-6
F 10-1	11-2			P 6-6	🟩
10-1	11-1			6-1	4-1
10-2	11-3			6-2	4-2
9-2	11-4			6-3	4-2
10-3	11-5			6-4	4-2
10-4	11-6			6-5	4-2
10-2	11-3			6-2	4-1
	11-6			6-5	4-2
10-4				6-3	4-1
				7-3	4-1
				7-5	4-1
				7-4	4-1
					4-1
				7-5	4-2
				7-6	4-4

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Integral Root Theorem				
Descartes' Rule of Signs				
Exponential, Logarithmic Equations				
Exponential Equations				
Graph exponential equations				
Solve exponential equations				
Exponential growth and decay (NAEP 12)				
Logarithms, definition				
Properties of logarithms				
Common logarithms				
Natural logarithms and *e*				
Logarithmic equations				
Solve logarithmic equations				
Solve by graphing				
Change of base formula				
Solve using natural logarithms				
Radical Expressions and Equations				
Pythagorean Theorem (NAEP 8, NAEP 12)		11-3	3-4	9-5
Simplify radical expressions			3-1	9-1
Operate with radical expressions				
Solve radical equations				
Distance Formula (NAEP 12)			3-6	9-6
Solve radical inequalities				
Imaginary numbers				
Simplify expressions, complex numbers				
Conics				
Conic sections, degenerate conics (NAEP 12)				
Parabolas, definition			12-2	F 13-6
Standard equation				
Properties (focus, directrix)				
General form				
Maximum, minimum points				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
				7-6	4-4
				7-5	4-4
🟥	11-7			10-1	11-2
				10-4	11-5
🟥	11-7			10-6	11-2
				10-2	11-2
				10-3	11-4
				10-4	11-5
				10-5	11-6
				10-5	11-4
				10-5	11-4
				F 10-4	11-5
				10-4	11-5
				10-5	11-6
11-4	8-7	6-6	7-2	🟩	SAT 5
11-1	14-3	13-1	🟩	5-6	🟩
11-2	14-4	13-1		5-6	4-7
11-3	14-5			5-8	4-7
11-5	14-2		1-3	8-1	10-1
				5-8	4-7
				5-9	4-8
				5-9	9-5
		INV 12		8-6	10-2
10-1	11-1			8-2	10-5
				8-2	10-5
				8-2	10-5
					10-5
10-1	11-1			8-2	10-5

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Algebra *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Circles, definition				
Standard equation				
Properties (center, radius)				
Ellipses, definition				
Standard equation				
Properties (axis, center, foci)				
Eccentricity				
Symmetry				
Hyperbolas, definition				
Standard equation				
Properties (center, vertex, asymptotes)				
Equations of asymptotes				
Eccentricity				
Equilateral, regular hyperbolas				
General equation for conics				
Identify conic from equation				
Identify using discriminent				
Graph with calculators				
Transformations of conics				
Solve systems of equations				
Graph systems of inequalities				
Parametric equations of conics				
Transformation matrices and conics				
Parametric Equations				
Vectors and parametric equations				
Parametric equation of a line				
Trigonometry and Calculus				
Trigonometry				
Right Triangle Trigonometry				
Sine, cosine, tangent ratios			4-7b	9-8
Secant, cosecant, cotangent ratios				
Applications			4-7b	9-8
Angle of elevation, depression (NAEP 12)			4-7b	9-8

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
			10-1	8-3	10-2
		14-6		8-3	10-2
		11-1	10-1	8-3	10-2
				8-4	10-3
				8-4	10-3
				8-4	10-3
				8-4	10-3
				8-4	10-3
				8-5	10-4
				8-5	10-4
				8-5	10-4
				8-5	10-4
				8-6	10-4
				8-5	10-4
				8-6	10-6
				8-6	10-6
					10-7
				8-5	10-2
					10-7
				8-7	10-8
				8-7	10-8B
					10-6
					10-7

					8-6
					8-6

11-7		13-4	7-4	13-1	5-2
			7-4	13-1	5-2
11-7		13-4	7-4	13-1	5-2
11-7		13-4	7-5	13-1	5-4

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Trigonometry and Calculus *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Law of Sines				
Law of Cosines				
Area of triangles				
Solving right triangles				
Trigonometric Functions				
Unit circle				
Radian measure				
Trigonometric functions, general angles				
Trigonometric functions, special angles				
Applications				
Circular functions				
Periodic functions				
Sinusoidal functions				
Period				
Inverse trigonometric functions				
Normal form of a linear equation				
Distance from point to a line				
Distance between parallel lines				
Lines that bisect angles				
Approximate with polynomials				
Graphing Trigonometric Functions				
Graphs of trigonometric functions				
Properties (sin, cos)				
Properties (tan, cot, csc, sec)				
Graphing trigonometric functions				
Amplitude, period				
Phase shift				
Translations of sine, cosine				
Vertical shift of sine, cosine				
Compound functions				
Graph inverse functions				
Trigonometric Identities, Equations				
Trigonometric identities				
Sum and difference identities				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
			7-6	13-4	5-6
			7-7	13-5	5-8
				13-4	5-6
				13-1	5-5

				13-2	5-3
				13-2	6-1
				13-3	5-3
					5-5
				13-1	5-4
				13-6	5-3
				13-6	6-3
					6-6
				13-6	6-7
				13-7	6-8
					7-6
					7-7
					7-7
					7-7
					12-7

				14-1	6-3
				14-1	6-3
				14-1	6-7
				14-1	6-5
				14-1	6-4
				14-2	6-5
				14-2	6-5
				14-2	6-5
					6-5
					6-8

		13-5	F 7-7	14-3	7-1
				14-5	7-3

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Trigonometry and Calculus *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Double-angle, half-angle identities				
Verifying identities				
Solve trigonometric equations				
Write trigonometric equations				
Trigonometric inequalities				
Calculus and Limits				
Limits				
Limit of an infinite series				
Limit notation				
Continuity				
Limit of a function				
Limit of a continuous function				
Derivatives				
Critical points				
Tangent to a curve				
Secant line				
Derivative				
Integrals				
Antiderivative				
Antiderivative rules				
Rate of change function				
Integrals				
Area under a curve				
Definite integral				
Fundamental Theorem of Calculus				
Geometry and Spatial Sense				
Geometry				
Constructions				
Congruent segments	13-3a			F 10-1
Congruent angles	13-3a	10-1b		F 10-1
Segment bisectors	13-3			F 10-1
Angle bisectors	13-3	10-1b	6-2b	F 10-1
Parallel lines (NAEP 8, NAEP 12)		10-3b	6-1a	

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
				14-6	7-4
				14-4	7-2
				14-7	7-5
				14-2	6-4
					7-5

					12-2
					12-2
					3-5
					UP 5
					15-1

					3-6
					3-6
					15-2
					15-2

					15-2
					15-2
					15-2
					15-3
					15-3
					15-3
					15-4

		2-3	1-2		
		3-2	1-4		
		2-3	1-3		
		3-3	1-4		
		4-4	3-5		

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Perpendicular lines		10-1b	6-3b	
Polygons, inscribed				
Congruent triangles			6-5b	
Circle inscribed in polygon				
Segment trisector				
Median of trapezoid				
Rectangle				
Rhombus				
Tangent to a circle (NAEP 12)				
Altitude				
Perpendicular bisector				
Circumcenter, centroid, orthocenter				
Nine-point circle				
Median, altitude, perpendicular bisector				
Similar triangles				
Golden triangle				
Points, Lines, Planes				
Lines, planes, collinear, coplanar				11-1
Measuring segments	12-3a			
Perimeter (NAEP 8, NAEP 12)	4-5	6-8	🟩	3-7
Pythagorean Theorem (NAEP 8, NAEP 12)		11-3	3-2	9-5
Distance Formula (NAEP 12)			3-6	9-6
Parallel lines (NAEP 8, NAEP 12)	13-4	10-3b	6-1	10-1
Skew lines	14-4		7-4	11-1
Parallel lines and transversal, angles (NAEP 12)	14-1	10-3b	6-1	10-1
Slope of line		4-7	4-3	8-4
Perpendicular lines	13-3	10-1b	6-1	10-1
Parallel lines and distance (NAEP 12)				
Distance from a point to a line				
Parallel lines and proportional parts (NAEP 12)				
Midpoint				9-6
Parallel Postulate				

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
		3-7	F 1-5		
		11-4			
		5-5	4-4		
			F 10-5		
			6-4		
			8-6		
			8-4		
			8-5		
			10-5		
		6-2	P 5-1		
		6-2	1-3		
		INV 6			
		INV 6			
		6-1	P 5-1		
		9-3			
		INV 9			

		1-2	1-1		
		2-2	1-2		
🟩	1-5	1-6	1-6	🟩	5-7
11-4	8-7	6-6	7-2	🟩	SAT 5
11-5	14-2	6-7	1-3	8-1	10-1
5-6	7-7	4-1	3-1	2-3	1-5
		4-1	3-1		
	PST 12	4-2	3-1		SAT 9
5-1	7-1	4-5	3-3	2-3	
5-6	7-7	3-7	1-5	2-3	1-3
			3-6		
			3-6		
		9-4	6-4		
4-1	INV 14	2-3	1-3	8-1	10-1
		4-4	3-5		

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Angles				
Classify and measure angles (degrees)	13-1	10-1a	6-1	9-3
Radian measure				
Angle relationships	13-1	10-3	6-1	10-1
Angle relationship theorems				
Quadrantal, coterminal angles				
Reference angle				
Polygons and Area				
Identify polygons, definition	13-4	10-7	6-4	10-6
Classify polygons	13-4	10-7	6-2	10-6
Congruent figures	13-6	10-3	6-5	10-2
Angles of polygons	13-4b	10-7	6-5a	10-6
Tessellations	13-6b	10-7	6-9b	F 10-3
Convex, concave				
Area				
Irregular figures				10-8
Rectangle	1-8	6-8	🟩	3-7
Parallelogram	14-1	11-4	7-1	10-5
Triangle	14-2	11-5	7-1	10-5
Rhombus, trapezoid	14-2b	11-5	7-1	10-5
Regular polygons and circles	14-3	11-6	7-2	10-7
Geometric probability (area models)	11-4	11-8		
Square roots and area of squares		11-2	3-1	9-1
Apothem (center to side midpoint)				
Triangles				
Classify triangles	13-4	10-4	6-2	9-4
Sum of angles in a triangle	13-4b	10-4	6-2	9-4
Congruent triangles	13-6		6-5	9-4
Prove triangles congruent				
Isosceles triangle properties and proof		10-4b		
Segments in triangles				
Right triangles		10-4	3-4	9-4
Triangle inequality				
Inequalities (SAS, SSS)				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
🟩	12-3	3-2	1-4	13-2	5-1
				13-2	6-1
🟩		3-4	1-5	🟩	SAT 9
		3-6	2-8		
				13-3	5-1
				13-3	5-1
🟩		9-2	1-6		
🟩		10-1	1-6		
		5-4			
1-8		10-2	8-1		12-1
		10-7	9-4		
		10-1	1-6		
		10-3	11-4		
🟩	PST 13	1-6	🟩	🟩	🟩
		1-6	11-1		5-8
🟩	4-4	10-4	11-2	🟩	4-5
	4-7	10-4	11-2	🟩	5-8
🟩		10-5	11-3	🟩	
	15-2	11-6	11-5	12-3	
		10-5	11-3		5-4
	8-7	5-1	4-1		
8-7		5-2	4-2	🟩	🟩
		5-4	4-3		
		5-5	4-4		
	PST 12	6-4	4-6		
		INV 7	5-1		
🟩	8-7	6-5	F 4-5	13-1	5-2
	12-5	7-4	5-4		
			5-5		

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Scope and Sequence Grades 6–12

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Similar triangles, identify	13-6	10-6	4-5	9-7
Centroid				
Angle bisectors				
Exterior Angle Theorem				
Inequalities within a triangle				
Triangles and parallel lines				
Right Triangles and Trigonometry				
Special right triangles			6-3	
Geometric mean				
Pythagorean Theorem (NAEP 8, NAEP 12)		11-3	3-4	9-5
Pythagorean Theorem, model			3-4	9-5
Trigonometric ratios in right triangles (NAEP 12)			4-7b	9-8
Angle of elevation and depression (NAEP 12)			4-7b	9-8
Law of Sines				
Law of Cosines				
Quadrilaterals				
Classify quadrilaterals	13-4	10-5	6-4	10-4
Angles in quadrilaterals	13-4	10-5	6-4	10-4
Parallelograms	13-4		6-4	10-4
Rectangles	1-8		6-4	10-4
Squares and rhombi	13-4		6-4	10-4
Trapezoids	13-4		6-4	10-4
Kites				
Congruent figures	13-6		6-5	10-2
Similarity and Proportion				
Corresponding parts of similar figures	13-6	10-6	4-5	9-7
Similar figures	13-6	10-6	4-5	9-7
Similar polygons		10-6	4-5	9-7
Similar triangles		10-6	4-5	9-7
Scale drawings (NAEP 8, NAEP 12)	10-3	7-4	4-6	6-3
Indirect measurement (NAEP 8, NAEP 12)		10-6	4-7	9-7
Dilation		10-8b	4-8	F 10-3

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
		9-3	6-3		
		6-1	5-1		
		6-3	1-4		
		7-2	4-2		
		7-3	5-2		
		9-5	6-4		

	PST 15	13-2	7-3	P 13-1	5-2
10-7			7-1		
11-4	8-7	6-6	7-2	🟩	SAT 5
	8-7	6-6	F 1-3		
11-7		13-4	7-4	13-1	5-2
11-7		13-4	7-5	13-1	5-4
			7-6	13-4	5-6
			7-7	13-5	5-8

🟩		8-1	RM 8	🟩	
		8-1	8-2	🟩	SAT 7
	INV 14	8-2	8-2	🟩	8-1
	14-1	8-4	8-4	🟩	
		8-4	8-5	🟩	
	14-2	8-5	8-6		10-1
		INV 8	F 8-5		

11-6	PST 12		6-2	🟩	
11-6	PST 12		6-2	🟩	
	PST 12	9-2	6-2	🟩	
11-6	PST 12	9-3	6-3	13-1	5-2
3-6	5-2	9-2	6-2		
11-6		13-4	6-3	13-1	
4-2	2-2	16-6	9-5	4-4	

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Golden rectangle			4-5b	6-1
Parallel lines and proportional parts (NAEP 12)				
Parts of similar triangles				
Fractals (self-similarity)				
Sierpinski's Triangle	13-6			
Pascal's Triangle		9-6a	8-4b	F 12-6
Circles				
Radius, diameter, center	4-6	6-9	7-2	10-7
Circumference	4-6	6-9	7-2	10-7
Area	14-3	11-6	7-2	10-7
Angles and arcs				
Arcs and chords			7-2	
Inscribed polygons				
Inscribed angles (NAEP 12)				
Tangents to circles (NAEP 12)				
Angles formed by secants and tangents (NAEP 12)				
Chords, secants, tangents				
Area of circular sector				
Solids and Space				
Draw three-dimensional figures (NAEP 8)	14-4b	12-1	7-4	P 11-1
Cross sections (NAEP 8, NAEP 12)			7-7	
Identify three-dimensional figures (NAEP 8)	14-4		7-4	11-1
Platonic solids				
Nets (NAEP 12)	14-6a	12-4a	7-7a	P 11-1
Polyhedra and matrices				
Surface area				
Prisms and cylinders	14-6	12-4	7-7	11-4
Pyramids and cones			7-8	11-5
Spheres			7-8	11-5

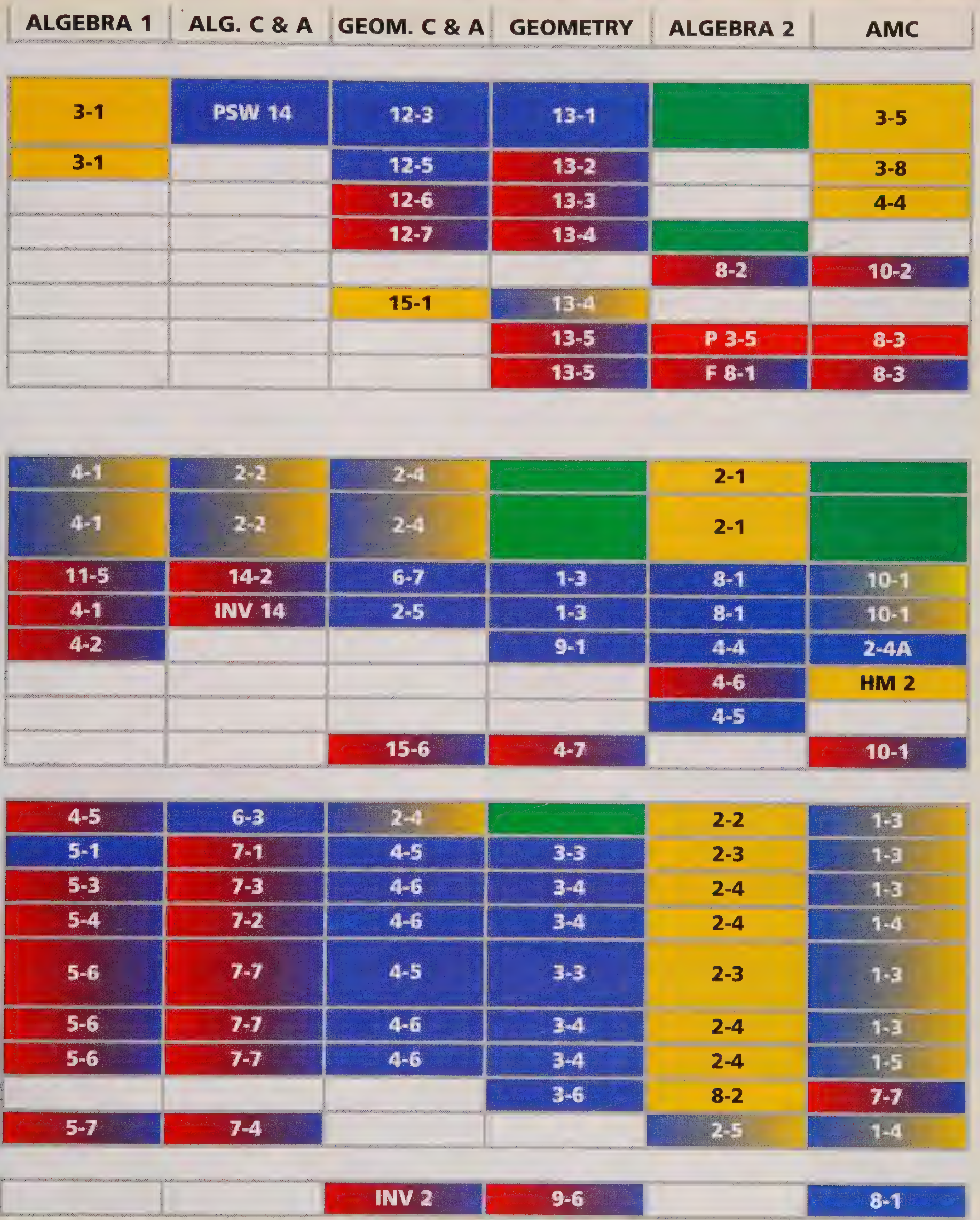
KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
		INV 9	8-4	6-4	
		9-6	6-4		
		9-6	6-5	🟩	5-2
			6-6	F 11-6	
			6-6		
F 2-6			6-6	11-7	
🟩	PST 13	11-1	10-1	8-3	10-2
🟩	PST 13	11-5	10-1	🟩	🟩
🟩	14-1	11-6	11-3	🟩	UP 2
		11-2	10-2		6-1
		11-3	10-3		
	PST 15	11-4	10-3		7-1
		14-1	10-4		5-6
		14-2	10-5		7-1
		14-3	10-6		7-1
		14-5	10-7		
			11-5		6-1
		12-1	12-1		
		INV 12	12-1		
🟩		12-1	12-1		
			12-1		
			12-2		
					8-8
1-1	PSW 14	12-2	12-3	1-2	
		12-4	12-5	1-3	
		12-6	12-7		

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Volume				
Prisms and cylinders (NAEP 8, NAEP 12)	14-5	12-2	7-5	11-2
Pyramids and cones (NAEP 12)			7-6	11-3
Spheres (NAEP 12)			7-6	
Congruent and similar solids			7-8b	11-6
Conic sections (NAEP 12)				
Relating surface area and volume		12-4b	7-8b	
Coordinates in space				
Distance in space				
Coordinate Geometry (Analytic geometry)				
Coordinate plane (coordinate system)	8-6	3-3	3-6	2-6
Graphing ordered pairs (NAEP 8, NAEP 12)	8-6	3-3	3-6	1-6
Distance Formula (NAEP 12)			3-6	9-6
Midpoint of a segment (NAEP 12)				9-6
Transformations with coordinates	13-5b	10-8	4-8	10-3
Cramer's Rule (determinants)				
Area with coordinates				
Coordinate proof				
Lines				
Graph linear equations		4-6	11-3	8-2
Slope of a line		4-7	4-3	8-4
Slope-intercept form of line			11-5	8-6
Write equation of a line				8-6
Slope of parallel, perpendicular lines (NAEP 12)			11-4	F 8-6
Equations of parallel lines				F 8-6
Equations of perpendicular lines				10-1
Distance from a point to a line				
Fitted lines on scatter plots			11-6	8-8
Vectors				
Vectors, definition				

KEY: Introduction | Development | Reinforcement | Implicit Use



ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
3-1	PSW 14	12-3	13-1	🟩	3-5
3-1		12-5	13-2		3-8
		12-6	13-3		4-4
		12-7	13-4	🟩	
				8-2	10-2
		15-1	13-4		
			13-5	P 3-5	8-3
			13-5	F 8-1	8-3

4-1	2-2	2-4	🟩	2-1	🟩
4-1	2-2	2-4	🟩	2-1	🟩
11-5	14-2	6-7	1-3	8-1	10-1
4-1	INV 14	2-5	1-3	8-1	10-1
4-2			9-1	4-4	2-4A
				4-6	HM 2
				4-5	
		15-6	4-7		10-1

4-5	6-3	2-4	🟩	2-2	1-3
5-1	7-1	4-5	3-3	2-3	1-3
5-3	7-3	4-6	3-4	2-4	1-3
5-4	7-2	4-6	3-4	2-4	1-4
5-6	7-7	4-5	3-3	2-3	1-3
5-6	7-7	4-6	3-4	2-4	1-3
5-6	7-7	4-6	3-4	2-4	1-5
			3-6	8-2	7-7
5-7	7-4			2-5	1-4

		INV 2	9-6		8-1

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Scalar multiplication of vectors				
Resultant or sum of vectors				
Geometric vectors				
Algebraic vectors				
Vector operations				
Perpendicular vectors				
Inner product, cross product				
Use vectors to represent velocity and direction (NAEP 12)				
Vectors in space				
Vector equation of a line				
Vectors and parametric equations				
Model with parametric equations				
Represented by complex numbers				
Coordinates in space				
Coordinates in space				
Distance in space				
Equation of a sphere				
Graphing equations in three variables				
Intersection of planes in space				
Equations for conic sections				
Parabola				
Circle				
Ellipse				
Hyperbola				
Nonlinear functions				
Polynomial and rational functions				
Exponential, logarithmic functions				
Trigonometric functions				
Iteration and fractals				
Polar coordinates				
Polar coordinate system				
Distance formula				
Graphs of polar equations				

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
			9-6		8-1
			9-6		8-1
					8-1
					8-2
					8-2
					8-4
					8-4
					8-5
					8-3
					8-6
					8-6
					8-6B
					9-5

			13-5	P 3-5	8-3
			13-5	F 8-1	8-3
			13-5	P 3-5	
				3-5	

10-1	11-1			8-2	10-5
		14-6		8-3	10-2
				8-4	10-3
				8-5	10-4

				7-1	3-7
10-5				10-1	11-2
				13-1	5-3
				F 11-6	9-5

					9-1
					9-1
					9-2

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

Scope and Sequence Grades 6–12

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Classical curves				
Polar and rectangular coordinates				
Polar form of linear functions				
Complex plane				
Complex plane, Argand plane				
Fractals				
Absolute value of a complex number				
Polar form of a complex number				
Transformations				
Geometric relationships				
Products and quotients, polar form				
Transformations and Symmetry				
Model transformations		🟥 10-8	🟥 4-8	🟥 10-3
Translations (NAEP 8, NAEP 12)	🟥 13-5b	🟥 10-8	🟥 6-8	🟥 10-3
Reflections	🟥 13-5b	🟥 10-9	🟥 6-7	🟥 10-3
Rotations	🟥 13-5b	🟥 10-9b	🟥 6-9	🟥 10-3
Isometries				
Dilations		🟥 10-8b	🟥 4-8	🟥 F 10-3
Mapping, image, preimage				
Transformation matrices				
On the coordinate plane				
On the complex plane				
In space, with vectors				
Tessellations	🟥 13-6b	🟥 10-7	🟥 6-9b	🟥 F 10-3
Symmetry (line and rotation) (NAEP 8, NAEP 12)	🟥 13-5	🟥 10-9	🟦 6-6	🟦 P 10-3
Loci				
Draw and describe locus of points				
Intersection of loci				
Spherical Geometry (Non-Euclidean)				
Reasoning and Proof				
Logical reasoning in problem solving		🟦 10-7a	🟦 6-4b	
Paragraph proof (informal proof)				
Inductive reasoning		🟥 10-7a	🟥 6-4b	🟥 1-1

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
					9-2
					9-3
					9-4

				5-9	9-6
					9-6
				5-9	9-6
					9-6
					9-6
					9-6B
					9-7

4-2	2-3	5-3	9-2	4-4	2-4
4-2	2-5	5-3	9-1	4-4	2-4
4-2		5-3	9-3	4-4	2-4
			9-1	4-4	
4-2	2-2	16-6	9-5	4-4	2-4
4-2		5-3	P 9-1	4-4	2-4
		16-3	9-7	4-4	2-4A
		16-3	9-7	4-4	2-4
					9-6
					8-8
		10-7	9-4		
4-2		10-6	9-1	6-1	3-1

		INV 11	1-1		10-5
			5-1		
		INV 4	F 3-6		7-2

1-7		PST 15			
		15-3	2-5		
RM 4		1-1	2-1		

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Scope and Sequence Grades 6–12

Geometry and Spatial Sense *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Conjecturing			1-1	1-1
If-then statements				
Hypothesis, conclusion				
Converse, inverse, contrapositive				
Venn diagrams	SS 5	5-2	3-3a	4-4
Matrix logic				
Truth tables				
Deductive reasoning		10-7a	6-4b	1-4
Proof in algebra (NAEP 12)				
Laws of Detachment and Syllogism				
Two-column proof (formal proof)				
Flow proofs				
Indirect proofs				
Coordinate proofs (analytic proofs)				
Mathematical induction				
Proofs				
Line segments				
Angle relationships				
Parallel lines (NAEP 8, NAEP 12)				
Triangle Angle Sum Theorem				
Congruent triangles				
Isosceles triangles				
Segments in triangles				
Right triangles				
Parallelograms				
Rhombi				
Trapezoids				
Similar triangles				
Pythagorean Theorem (NAEP 8, NAEP 12)				
Circles (NAEP 12)				
Tangents (NAEP 12)				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	PSW 2	1-1	2-1		
1-7		1-4	2-3		
1-7		1-4	2-3		
	8-7	1-5	2-3		
🟩	10-1	8-4	2-2	🟩	
			F 2-4		
		15-1	2-2		
1-7		15-2	2-4		
		15-4	2-6		
		15-2	2-4		
		15-4	2-6		
			4-2		
		INV 15	5-3		1-5
		15-6	4-7		10-1
				11-8	12-8

		15-5	2-7		
		15-3	2-8		
		4-4	3-5		
			4-2		
		15-3	4-4		
		15-5	4-6		
		15-5	5-1		
		15-5	F 4-5		
		15-5	8-2		
			8-5		
		15-5	8-6		
			6-3		
			7-2		
			10-3		
			10-5		

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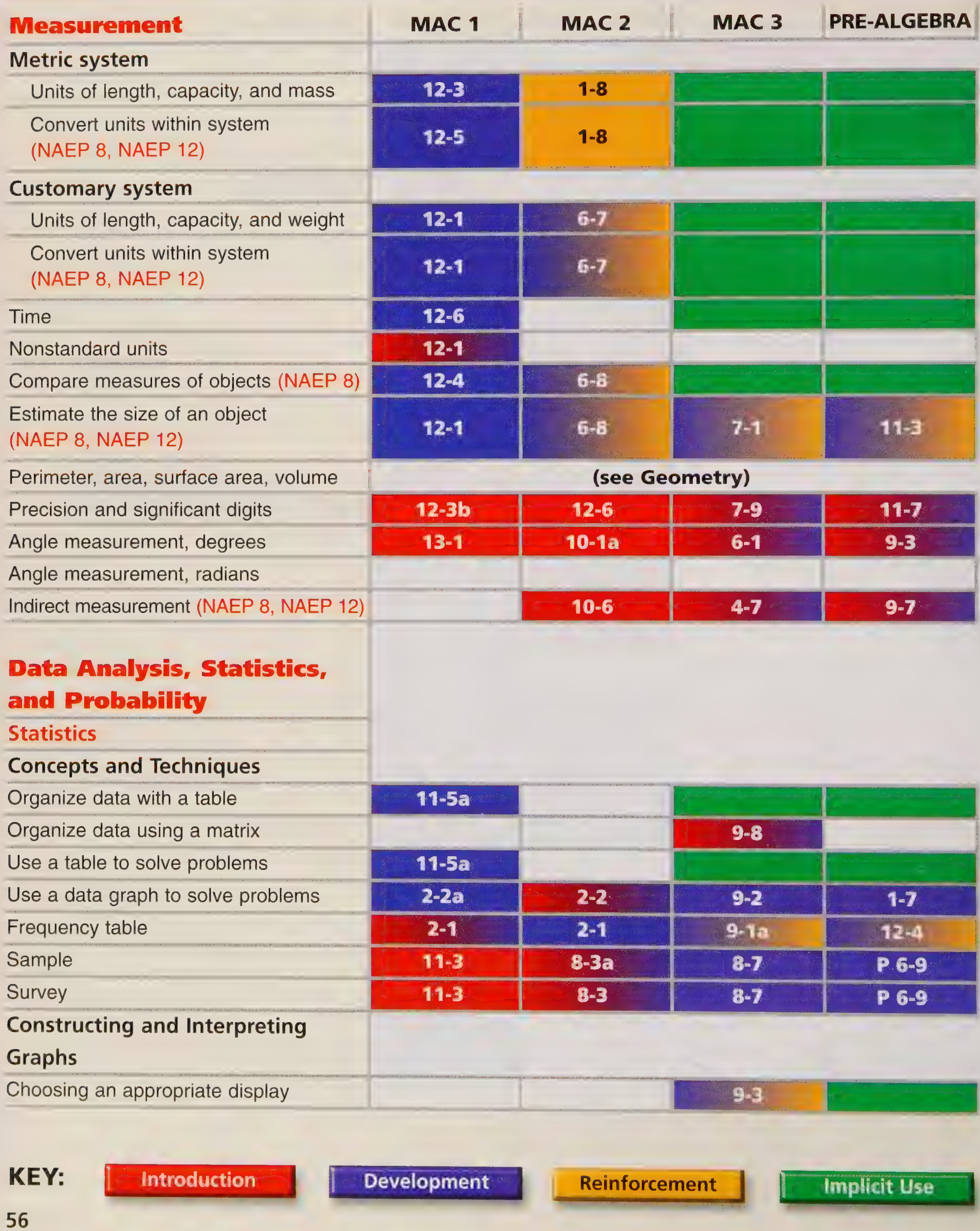
Scope and Sequence Grades 6–12



Measurement	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Metric system				
Units of length, capacity, and mass	12-3	1-8	🟩	🟩
Convert units within system (NAEP 8, NAEP 12)	12-5	1-8	🟩	🟩
Customary system				
Units of length, capacity, and weight	12-1	6-7	🟩	🟩
Convert units within system (NAEP 8, NAEP 12)	12-1	6-7	🟩	🟩
Time	12-6		🟩	🟩
Nonstandard units	12-1			
Compare measures of objects (NAEP 8)	12-4	6-8	🟩	🟩
Estimate the size of an object (NAEP 8, NAEP 12)	12-1	6-8	7-1	11-3
Perimeter, area, surface area, volume	(see Geometry)			
Precision and significant digits	12-3b	12-6	7-9	11-7
Angle measurement, degrees	13-1	10-1a	6-1	9-3
Angle measurement, radians				
Indirect measurement (NAEP 8, NAEP 12)		10-6	4-7	9-7
Data Analysis, Statistics, and Probability				
Statistics				
Concepts and Techniques				
Organize data with a table	11-5a		🟩	🟩
Organize data using a matrix			9-8	
Use a table to solve problems	11-5a		🟩	🟩
Use a data graph to solve problems	2-2a	2-2	9-2	1-7
Frequency table	2-1	2-1	9-1a	12-4
Sample	11-3	8-3a	8-7	P 6-9
Survey	11-3	8-3	8-7	P 6-9
Constructing and Interpreting Graphs				
Choosing an appropriate display			9-3	🟩

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	5-1	2-2	🟩		
	5-1		🟩		

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	5-1	2-2	🟩		
	5-1		🟩		
	PST 1				

(see Geometry)

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
		2-2	1-2		
		3-2	1-4		5-1
				13-2	6-1
11-6		13-4	6-3	13-1	

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
1-9	INV 6	PST 4		🟩	🟩
13-2	INV 2			4-1	2-3
1-9	2-4	PST 5		🟩	🟩
1-9	1-7	PST 4		🟩	🟩
🟩	1-6	PST 4		🟩	🟩
13-1	1-6			12-8	14-5
		MIW 1		🟩	

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC

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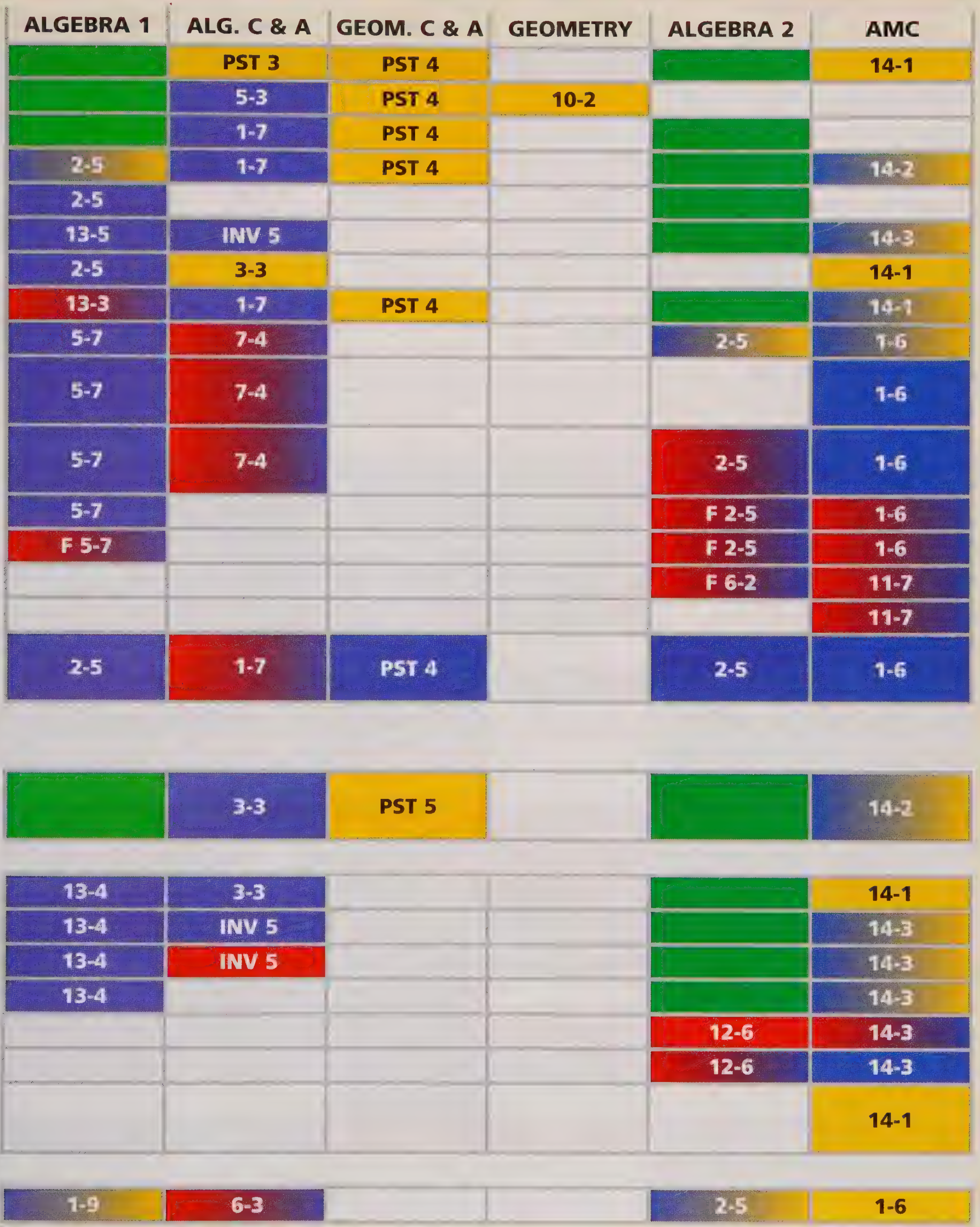
Scope and Sequence Grades 6–12

Data Analysis, Statistics, and Probability *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Bar graphs (NAEP 8, NAEP 12)	2-2	2-7	🟩	🟩
Circle graphs (NAEP 8, NAEP 12)	2-3	10-2	9-2	F 9-3
Line graphs (NAEP 8, NAEP 12)	2-2	2-2	🟩	🟩
Stem-and-leaf plots (NAEP 8, NAEP 12)	2-5	2-5	🟩	12-1
Back-to-back stem-and-leaf plots				12-1
Box-and-whisker plots (NAEP 8, NAEP 12)	2-7b	2-6	9-6	12-3
Line plots		2-3	🟩	5-8
Histograms (NAEP 8, NAEP 12)	6-1	2-7	9-1	12-4
Scatter plots (NAEP 8, NAEP 12)		2-2	11-6	1-7
Positive, negative, no correlation (NAEP 12)			11-6	1-7
Fitted line (prediction equation) (NAEP 8, NAEP 12)			11-6	8-8
Best-fit line, regression line				
Curve fitting with calculators				
Nonlinear regression				
Linearizing data				
Compare two or more data sets (NAEP 8, NAEP 12)	2-2a	2-2a	9-1	5-8
Interpreting Data				
Measures of Central Tendency				
Mean, median, and mode (NAEP 8, NAEP 12)	2-7	2-4	9-4	5-8
Measures of Variation				
Range (NAEP 8, NAEP 12)	2-7	2-3	9-5	12-2
Quartiles	2-7b	2-6	9-5	12-2
Interquartile range (NAEP 12)	2-7b	2-6	9-5	12-2
Outlier (NAEP 8, NAEP 12)		2-3	9-5	12-2
Mean deviation				
Standard deviation (NAEP 12)				
Misleading Graphs and Statistics (NAEP 8, NAEP 12)	2-8	2-8	9-7	12-5
Making Predictions				
From graphs	2-4	2-2	11-6	8-8

KEY: 🟥 Introduction 🟦 Development 🟨 Reinforcement 🟩 Implicit Use



ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
🟩	PST 3	PST 4		🟩	14-1
🟩	5-3	PST 4	10-2		
🟩	1-7	PST 4		🟩	
2-5	1-7	PST 4		🟩	14-2
2-5				🟩	
13-5	INV 5			🟩	14-3
2-5	3-3				14-1
13-3	1-7	PST 4		🟩	14-1
5-7	7-4			2-5	1-6
5-7	7-4				1-6
5-7	7-4			2-5	1-6
5-7				F 2-5	1-6
F 5-7				F 2-5	1-6
				F 6-2	11-7
					11-7
2-5	1-7	PST 4		2-5	1-6
🟩	3-3	PST 5		🟩	14-2
13-4	3-3			🟩	14-1
13-4	INV 5			🟩	14-3
13-4	INV 5			🟩	14-3
13-4				🟩	14-3
				12-6	14-3
				12-6	14-3
					14-1
1-9	6-3			2-5	1-6

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Scope and Sequence Grades 6–12

Data Analysis, Statistics, and Probability *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
From a sample	11-3	8-3	8-7	6-9
Advanced Concepts				
Margin of sampling error				
Hypothesis testing				
Design of experiments (NAEP 12)				
Frequency distribution				
Normal distribution (bell curve) (NAEP 12)				
Standard error of the mean				
Level of confidence				
Inferential statistics (NAEP 12)				
Percentile				
Probability				
Outcomes and sample space (NAEP 8, NAEP 12)	11-2	9-1	8-1	6-9
Simple event, probability of (NAEP 8, NAEP 12)	11-1	9-1	8-1	6-9
Complementary events	11-1	9-1	8-1	
Probability of success and failure				
Independent events (NAEP 8, NAEP 12)	11-5	9-7	8-5	12-9
Dependent events (NAEP 8, NAEP 12)		9-7	8-5	12-9
Mutually exclusive or inclusive events		9-7	8-5	12-9
Conditional probability (NAEP 12)				
Odds	11-1	9-6	8-1	12-8
Experimental probability (NAEP 8, NAEP 12)	11-1b	9-6	8-6	6-9
Theoretical probability (NAEP 8, NAEP 12)	11-1	9-6	8-6	6-9
Tree diagrams (NAEP 12)	11-2	9-2	8-2	12-6
Fundamental Counting Principle		9-3	8-2	12-6
Permutations and combinations	11-2	9-4	8-3	12-7
Probability and ratio	11-1	9-1	8-1	6-9
Fair and unfair games		9-2		
Simulations (NAEP 8, NAEP 12)	11-1a	9-6a	8-6b	F 6-9
Binomial experiments				
Punnett Squares (experiments)				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	1-6			12-9	14-5

				12-9	
				F 12-9	
14-5				F 12-9	
				12-7	14-1
				12-7	14-4
					14-5
					14-5
					14-5
F 13-5	INV 5				14-4

2-6	4-2			12-1	13-3
2-6	5-6			🟩	13-3
14-3	5-6				13-3
				12-3	13-3
14-3	5-7			12-4	13-4
14-3				12-4	13-4
14-3	5-7			12-5	13-4
				12-4	13-5
2-6	5-6	PST 3		12-3	13-3
14-5	5-6	PST 3		12-3	13-6
14-5	5-6			12-3	13-6
14-1	4-2	PST 3		12-1	13-1
14-1	4-2			12-1	13-1
14-2	INV 4	PST 3		12-2	13-1
2-6				🟩	
14-5				F 12-8	13-6
				12-8	13-6
	10-3				

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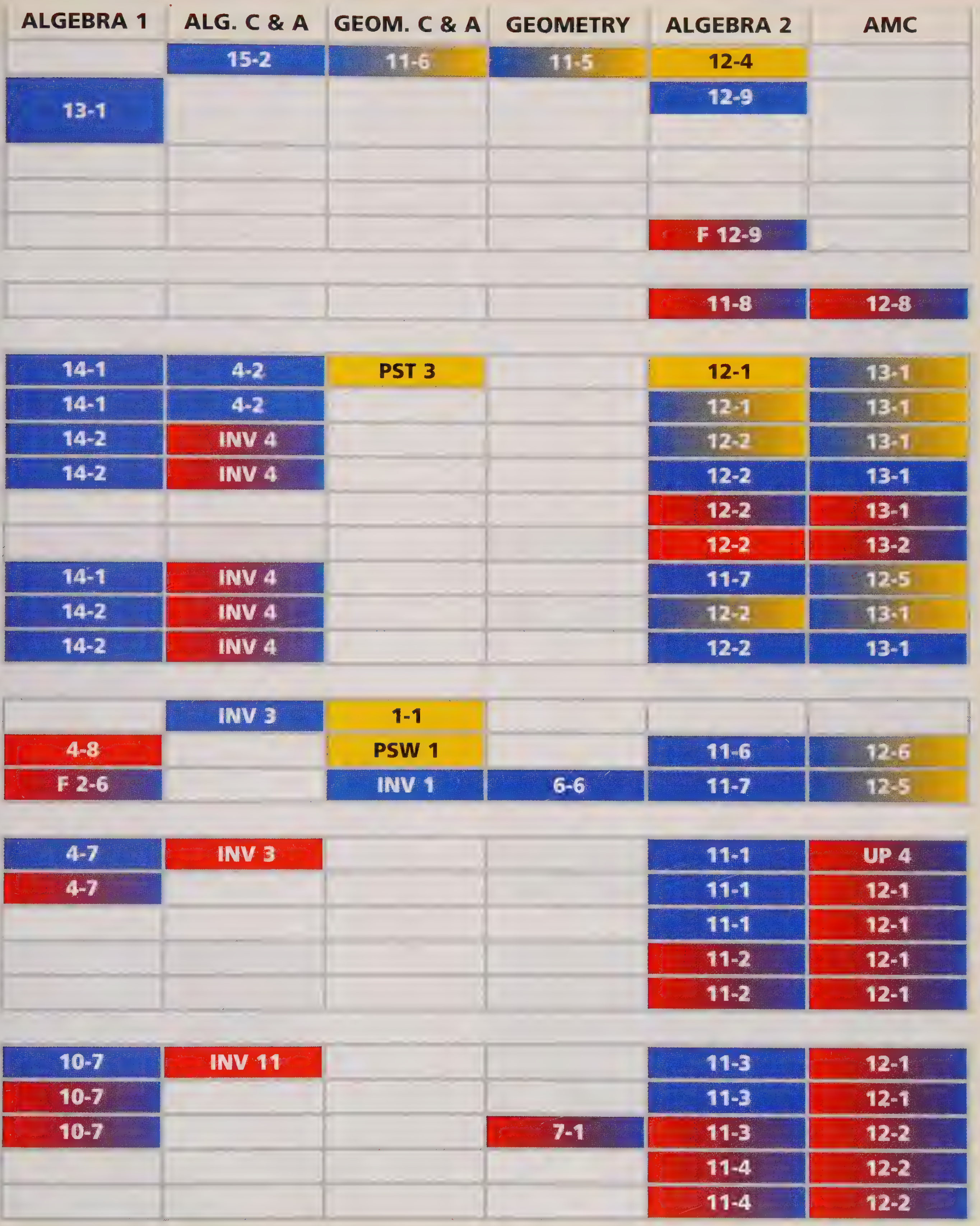
Scope and Sequence Grades 6–12

Data Analysis, Statistics, and Probability *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Geometric probability (area models)	11-4	11-8		
Bias, sampling and random samples (NAEP 8, NAEP 12)	11-3	8-3a	8-1	P 6-9
Random numbers with calculators			8-6b	F 6-9
Capture-recapture		7-3b		F 6-9
Hypothesis testing				
Discrete Math				
Mathematical Induction				
Counting (NAEP 12)				
Tree diagrams (NAEP 12)	11-2	9-2	8-2	12-6
Fundamental Counting Principle		9-3	8-2	12-6
Permutations (NAEP 12)	11-2	9-4	8-3	12-7
$P(n, r)$ definition, ${}_nP_r$				12-7
Permutations with repetition				
Circular permutations				
Factorial (!)		9-4	8-3	12-7
Combinations (NAEP 12)		9-5	8-4	12-7
$C(n, r)$ definition, ${}_nC_r$				12-7
Sequences and Series				
Arithmetic and geometric, informally	7-6	1-7	11-1	5-10
Fibonacci sequence			11-1b	F 5-10
Pascal's Triangle		9-6a	8-4b	F 12-6
Arithmetic Sequences and Series				
Arithmetic sequence, definition		1-7	11-1	5-10
Formula for *n*th term				
Arithmetic means				
Arithmetic series				
Sum of arithmetic series				
Geometric Sequences and Series				
Geometric sequence, definition		1-7	11-1	5-10
Formula for *n*th term				
Geometric means				
Geometric series				
Sum of finite geometric series				

KEY: Introduction Development Reinforcement Implicit Use



ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	15-2	11-6	11-5	12-4	
13-1				12-9	
				F 12-9	
				11-8	12-8
14-1	4-2	PST 3		12-1	13-1
14-1	4-2			12-1	13-1
14-2	INV 4			12-2	13-1
14-2	INV 4			12-2	13-1
				12-2	13-1
				12-2	13-2
14-1	INV 4			11-7	12-5
14-2	INV 4			12-2	13-1
14-2	INV 4			12-2	13-1
	INV 3	1-1			
4-8		PSW 1		11-6	12-6
F 2-6		INV 1	6-6	11-7	12-5
4-7	INV 3			11-1	UP 4
4-7				11-1	12-1
				11-1	12-1
				11-2	12-1
				11-2	12-1
10-7	INV 11			11-3	12-1
10-7				11-3	12-1
10-7			7-1	11-3	12-2
				11-4	12-2
				11-4	12-2

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Scope and Sequence Grades 6–12

Data Analysis, Statistics, and Probability *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Infinite geometric series				
Sum of infinite geometric series				
Advanced Topics				
Limits of infinite sequences				
Theorems for limits				
Sum of infinite series				
Sigma notation (Σ)				
Convergent, divergent series				
Trigonometric series				
Exponential series				
Continued fractions				
Binomial expansion				
Binomial Theorem				
Recursion				
Recursive formula, definition				
Fibonacci sequence, recursive form				
Iteration with real numbers				
Composition of functions				
Compound interest				
Iteration with complex numbers				
Graphical iteration, linear functions				
Graphical iteration, $f(z) = z^2 + c$				
Fractals				
Fractal, concept, description				
Self-similarity				
Matrices				
Use to organize data			9-8	
Add and subtract			9-8	
Scalar multiplication				
Multiplying matrices				
Graphs and matrices				
Represent vectors as column matrices				
Determinants				
Vectors and cross products				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
				11-5	12-2
					12-3

					12-2
					12-3
				11-5	12-3
				11-2	12-4
					12-3B
					12-7
					12-7
					12-3
				12-8	12-5
				12-7	12-6

4-7	INV 3		6-6	11-6	
				11-6	
			6-6	11-6	
				7-7	1-2
10-6				10-1	12-7
					9-5
					12-8
					12-8

			6-6	F 11-6	12-6
			6-6	F 11-6	

13-2	INV 2		🟩	4-1	2-3
13-2	INV 2		🟩	4-2	2-3
13-2	INV 2		🟩	4-2	2-3
			🟩	4-3	2-3
			9-7		2-3
			9-7		
				4-5	2-5
					8-4

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Data Analysis, Statistics, and Probability *(continued)*	MAC 1	MAC 2	MAC 3	PRE-ALGEBRA
Identity and inverse matrices				
Solve systems of equations				
Augmented matrices				
Equal matrices				
Transformation matrices				
Matrix equations				
Minor of an element				
Nonsingular matrix				
Transformation matrices in space				
Polyhedra represented as matrices				

KEY: Introduction Development Reinforcement Implicit Use

ALGEBRA 1	ALG. C & A	GEOM. C & A	GEOMETRY	ALGEBRA 2	AMC
	INV 13			4-7	2-5
	INV 13			4-8	2-5
	INV 13			F 4-8	2-5B
				4-1	2-3
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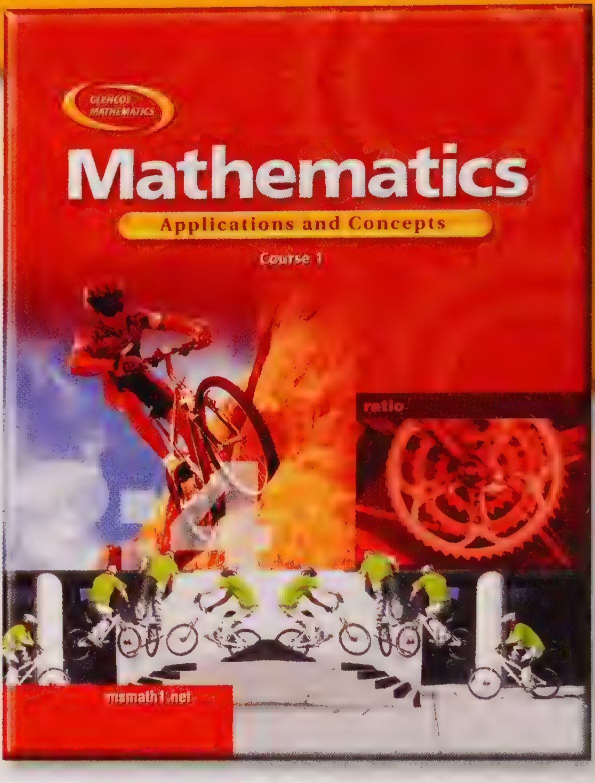
					8-8
					8-8

The **lesson numbers** given in the chart reference only the first occurrence of each concept or skill. Many other occurrences are found throughout the texts.

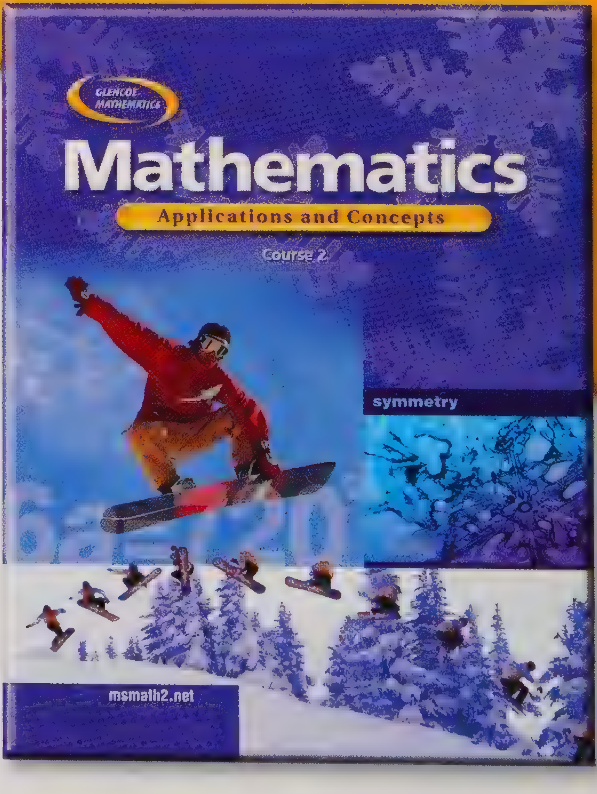
Mathematics: Applications and Concepts, Course 1

Unit 1	**Whole Numbers, Algebra, and Statistics**
1	Number Patterns and Algebra
2	Statistics and Graphs
Unit 2	**Decimals**
3	Adding and Subtracting Decimals
4	Multiplying and Dividing Decimals
Unit 3	**Fractions**
5	Fractions and Decimals
6	Adding and Subtracting Fractions
7	Multiplying and Dividing Fractions
Unit 4	**Algebra**
8	Algebra: Integers
9	Algebra: Solving Equations
Unit 5	**Ratio and Proportion**
10	Ratio, Proportion, and Percent
11	Probability
Unit 6	**Measurement and Geometry**
12	Measurement
13	Geometry: Angles and Polygons
14	Geometry: Measuring Area and Volume



Mathematics: Applications and Concepts, Course 2

Unit 1	**Decimals, Algebra, and Statistics**
1	Decimal Patterns and Algebra
2	Statistics: Analyzing Data
Unit 2	**Integers and Algebra**
3	Algebra: Integers
4	Algebra: Linear Equations and Functions
Unit 3	**Fractions**
5	Fractions, Decimals, and Percents
6	Applying Fractions
Unit 4	**Proportional Reasoning**
7	Ratios and Proportions
8	Applying Percent
9	Probability
Unit 5	**Geometry and Measurement**
10	Geometry
11	Geometry: Measuring Two-Dimensional Figures
12	Geometry: Measuring Three-Dimensional Figures



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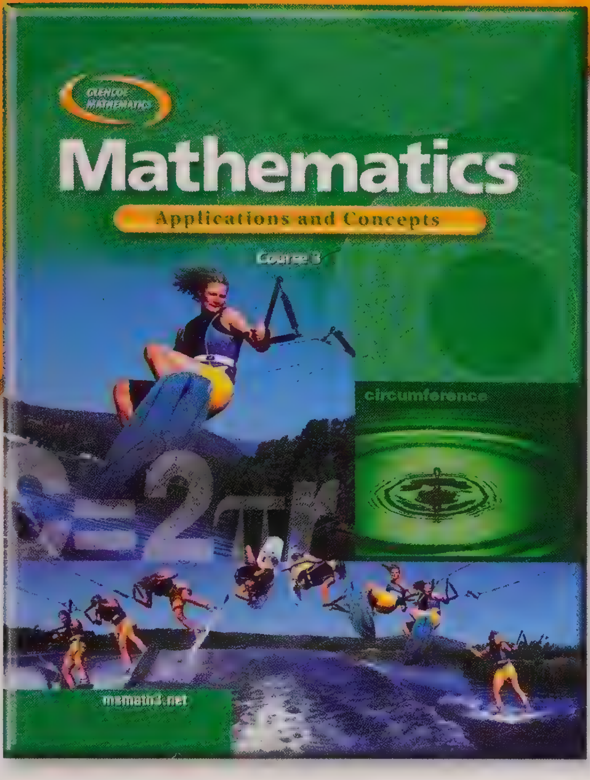


Unit 1 Real Numbers and Algebra
1 Algebra: Integers
2 Algebra: Rational Numbers
3 Algebra: Real Numbers and the Pythagorean Theorem

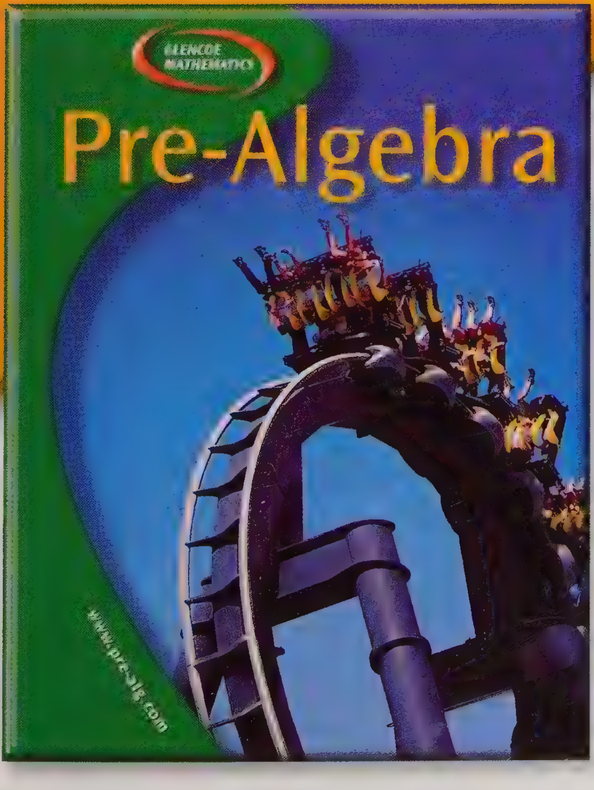
Unit 2 Proportional Reasoning
4 Proportions, Algebra, and Geometry
5 Percent

Unit 3 Geometry and Measurement
6 Geometry
7 Geometry: Measuring Area and Volume

Unit 4 Probability and Statistics
8 Probability
9 Statistics and Matrices

Unit 5 Algebra: Linear and Nonlinear Functions
10 Algebra: More Equations and Inequalities
11 Algebra: Linear Functions
12 Algebra: Nonlinear Functions and Polynomials

Pre-Algebra



Unit 1 Algebra and Integers
1 The Tools of Algebra
2 Integers
3 Equations

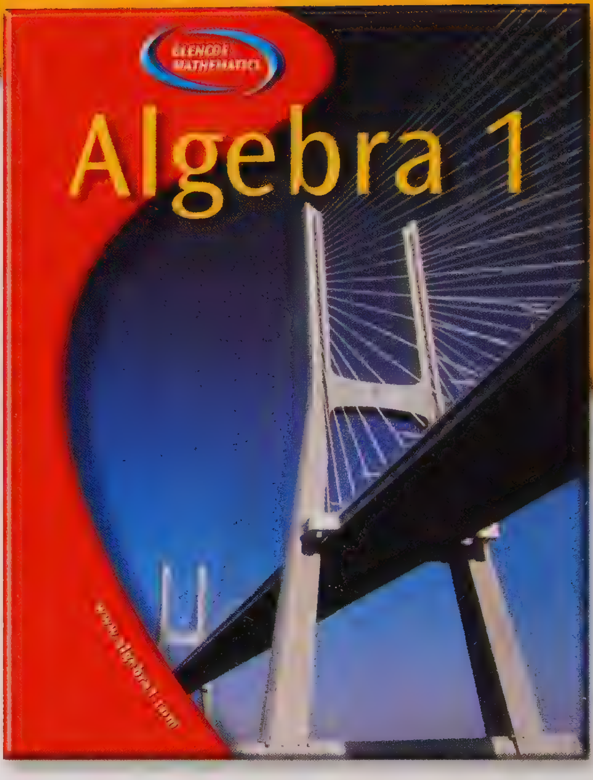
Unit 2 Algebra and Rational Numbers
4 Factors and Fractions
5 Rational Numbers
6 Ratio, Proportion, and Percent

Unit 3 Linear Equations, Inequalities, and Functions
7 Equations and Inequalities
8 Functions and Graphing

Unit 4 Applying Algebra to Geometry
9 Real Numbers and Right Triangles
10 Two-Dimensional Figures
11 Three-Dimensional Figures

Unit 5 Extending Algebra to Statistics and Polynomials
12 More Statistics and Probability
13 Polynomials and Nonlinear Functions

Algebra 1



Unit 1 **Expressions and Equations**

1 The Language of Algebra
2 Real Numbers
3 Solving Linear Equations

Unit 2 **Linear Functions**

4 Graphing Relations and Functions
5 Analyzing Linear Equations
6 Solving Linear Inequalities
7 Solving Systems of Linear Equations and Inequalities

Unit 3 **Polynomials and Nonlinear Functions**

8 Polynomials
9 Factoring
10 Quadratic and Exponential Functions

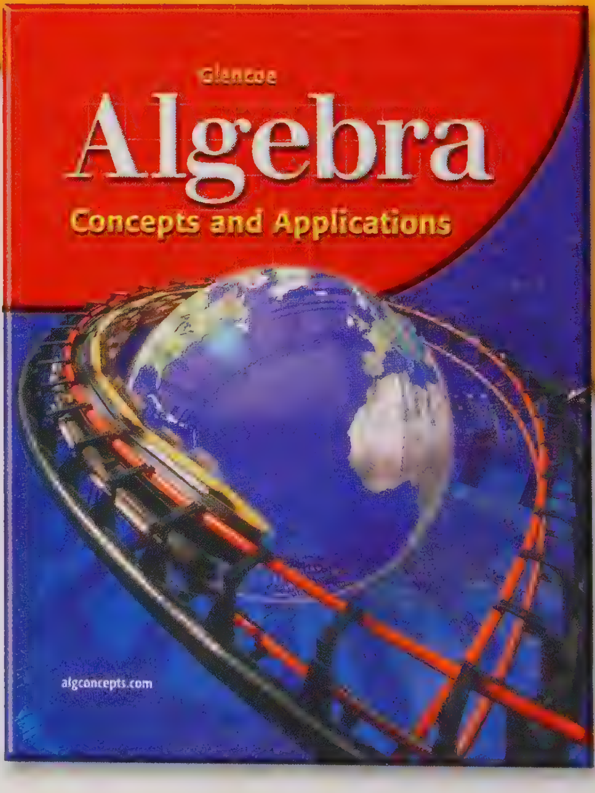
Unit 4 **Radical and Rational Functions**

11 Radical Expressions and Triangles
12 Rational Expressions and Equations

Unit 5 **Data Analysis**

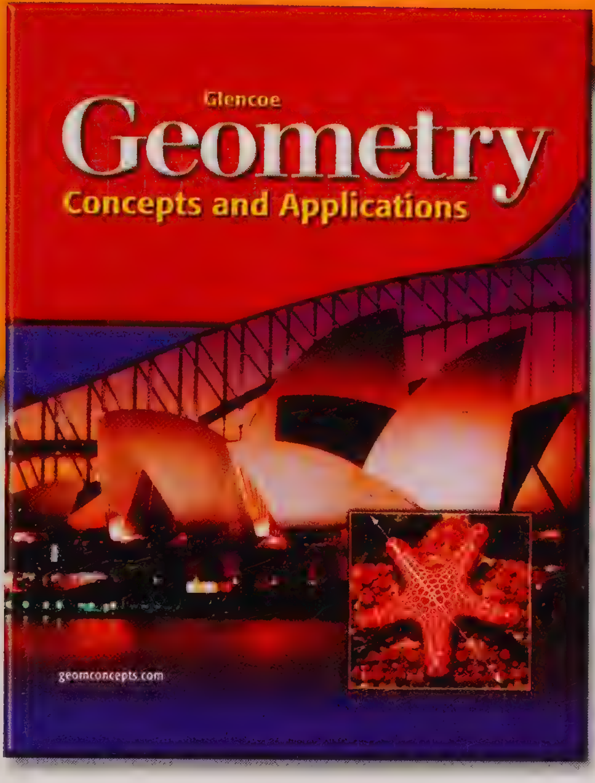
13 Statistics
14 Probability

Algebra: Concepts and Applications



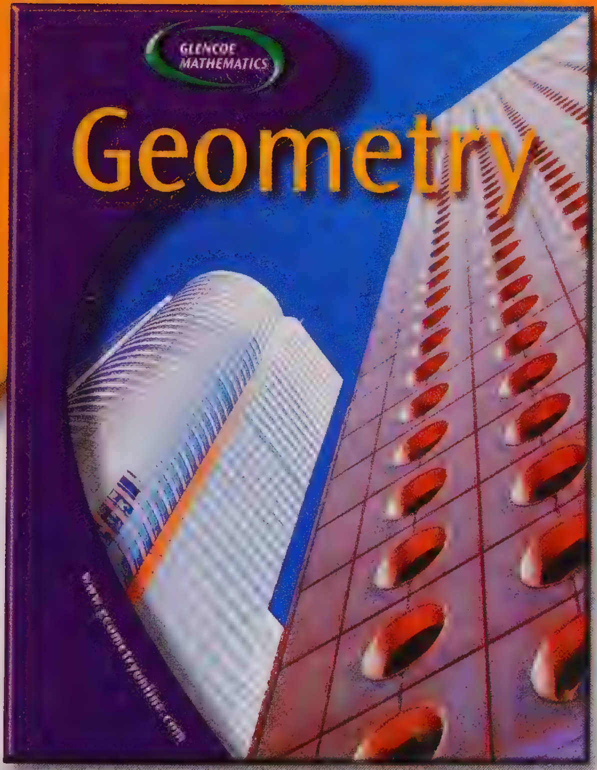
1 The Language of Algebra
2 Integers
3 Addition and Subtraction Equations
4 Multiplication and Division Equations
5 Proportional Reasoning and Probability
6 Functions and Graphs
7 Linear Equations
8 Powers and Roots
9 Polynomials
10 Factoring
11 Quadratic and Exponential Functions
12 Inequalities
13 Systems of Equations and Inequalities
14 Radical Expressions
15 Rational Expressions and Equations

Geometry: Concepts and Applications



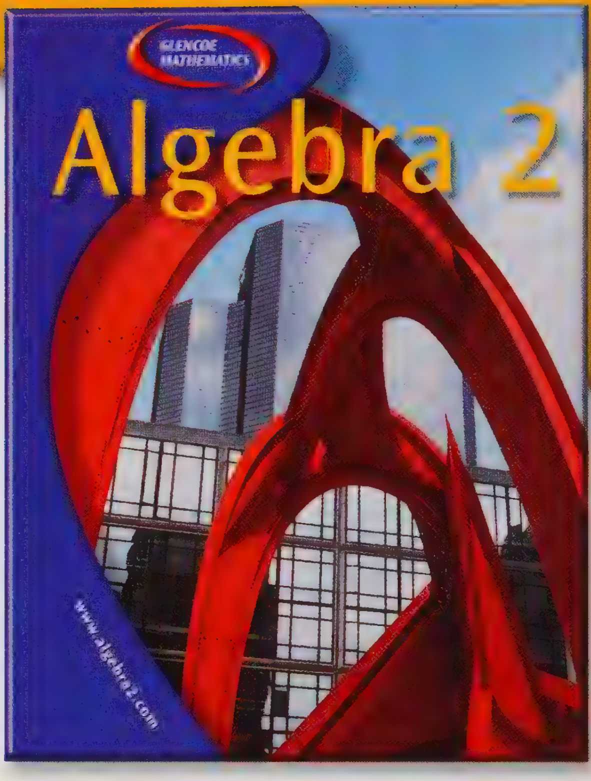
1	Reasoning in Geometry
2	Segment Measure and Coordinate Graphing
3	Angles
4	Parallels
5	Triangles and Congruence
6	More About Triangles
7	Triangle Inequalities
8	Quadrilaterals
9	Proportions and Similarity
10	Polygons and Area
11	Circles
12	Surface Area and Volume
13	Right Triangles and Trigonometry
14	Circle Relationships
15	Formalizing Proof
16	More Coordinate Graphing and Transformations

Geometry



Unit 1	Lines and Angles
1	Points, Lines, Planes, and Angles
2	Reasoning and Proof
3	Parallel and Perpendicular Lines
Unit 2	Triangles
4	Congruent Triangles
5	Relationships in Triangles
6	Proportions and Similarity
7	Right Triangles and Trigonometry
Unit 3	Quadrilaterals and Circles
8	Quadrilaterals
9	Transformations
10	Circles
Unit 4	Area and Volume
11	Areas of Polygons and Circles
12	Surface Area
13	Volume

Algebra 2



Unit 1 First Degree Equations and Inequalities
- 1 Solving Equations and Inequalities
- 2 Linear Relations and Functions
- 3 Systems of Equations and Inequalities
- 4 Matrices

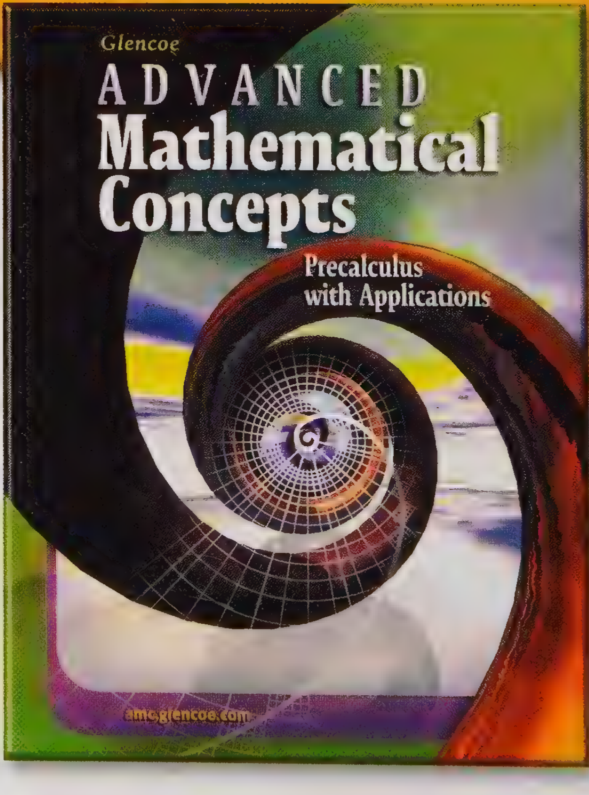
Unit 2 Polynomial and Radical Equations and Inequalities
- 5 Polynomials
- 6 Quadratic Functions and Inequalities
- 7 Polynomial Functions

Unit 3 Advanced Functions and Relations
- 8 Conic Sections
- 9 Rational Expressions and Equations
- 10 Exponential and Logarithmic Relations

Unit 4 Discrete Mathematics
- 11 Sequences and Series
- 12 Probability and Statistics

Unit 5 Trigonometry
- 13 Trigonometric Functions
- 14 Trigonometric Graphs and Identities

Advanced Mathematical Concepts



Unit 1 Relations, Functions, and Graphs
- 1 Linear Relations and Functions
- 2 Systems of Linear Equations and Inequalities
- 3 The Nature of Graphs
- 4 Polynomial and Rational Functions

Unit 2 Trigonometry
- 5 The Trigonometric Functions
- 6 Graphs of the Trigonometric Functions
- 7 Trigonometric Identities and Equations
- 8 Vectors and Parametric Equations

Unit 3 Advanced Functions and Graphing
- 9 Polar Coordinates and Complex Numbers
- 10 Conics
- 11 Exponential and Logarithmic Functions

Unit 4 Discrete Mathematics
- 12 Sequences and Series
- 13 Combinatorics and Probability
- 14 Statistics and Data Analysis

Unit 5 Calculus
- 15 Introduction to Calculus

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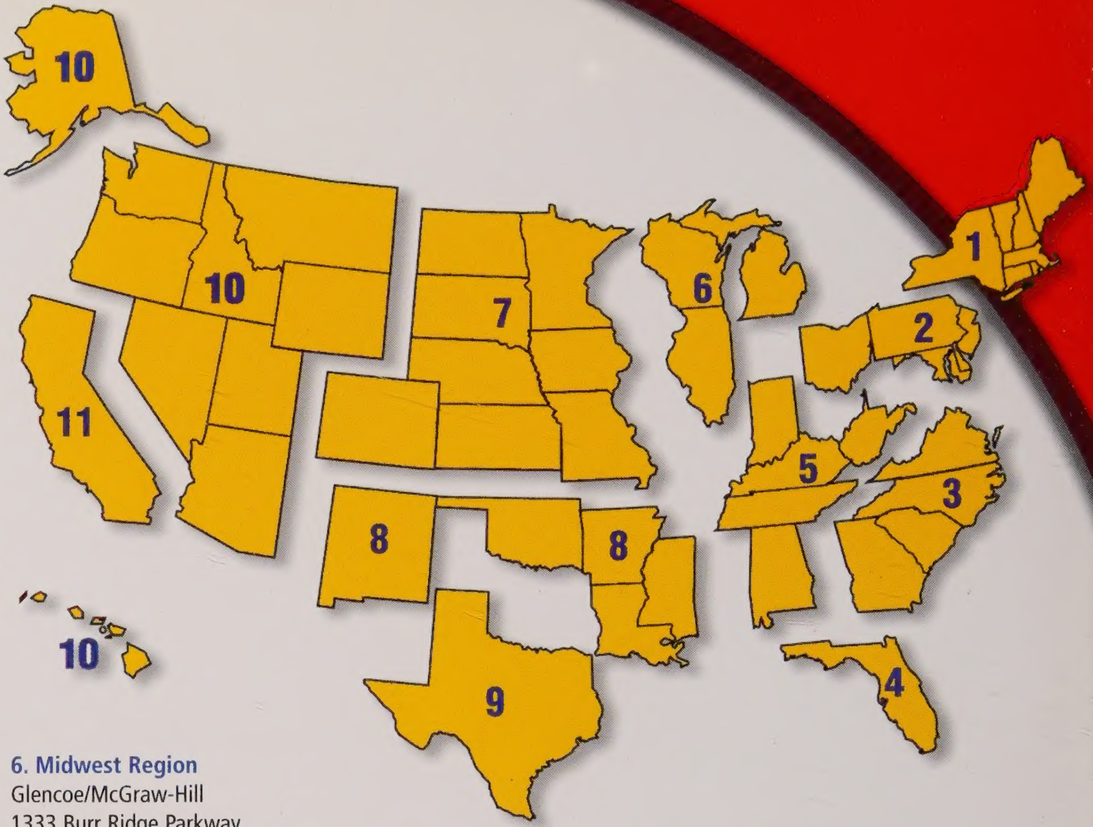

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